A Few Words on the Theme

The main theme of the researchers of today is the study of man and his environment. The history of civilization reveals the fact that nature is an open book of the history of civilization. To dig out the culture of the past one should study in detail the characteristics of civilization. To quote a maxim, "culture is the essence of civilization." With the more proper scanning of civilization the culture element will be more apparent. Thus civilization and culture are co-related.

Natural and cultural heritage so far are being neglected in writing a history of a country. To adopt a scientific approach in writing history of any geographical unit one should trace the co-relation of man and nature. How the habitat of a man determines his course of life, how a man has struggled against the hazards of nature, what achievements he had done in the course of his life, how the environment has affected his course of life are the issues to be analysed to trace the history of mankind. Environmental sensitivities are the determining factors in the genesis of development of any culture.

Nepal-German Project on High Mountain Archaeology has been designed for the exploration of the Cultural heritage of the Himalayan region of Western Nepal especially in Mustang district of Dhaulagiri zone of the western region. German experts like archaeologists, archaeological anatomist, Tibetologist, geographer, cartographer, along with the archaeologist of Department of Archaeology have jointly been involved in the research work in the region. They have been studying the geomorphology; the settlement process, socio-economic and cultural life of the people of Mustang with the aim of tracing the stages of evolution from ancient time to present day life.

Today, the Muktinath valley attracts many tourists. Its natural heritage fascinates them and they are equally curious at their cultural life. The study reports try to trace their cultural tradition on the basis of literary as well as archaeological sources. They have also been using the contemporary sources to dig out the remote past. Review of the exploration reports will bring out multi-dimensional aspects of the cultural life of the area.

The German archaeologist, Dr. Hans G. Hüttel's report entitled "Excavation of Khingar Mound 1991" gives an account of the presuppositions and of the main results of the Nepal German excavations of the Khingar Settlement mound in the Mustang district. Mr. Chandra Prasad Tripathee of the Department of Archaeology and Dr. H. G. Hüttel of German Archaeological Institute (Bonn) started excavations at Khingar in August 1991. Excavation in the Muktinath valley was not executed previously; the archaeological work needed basic research laying a stratigraphical foundation for future research. The researchers to begin with decided to excavate a small but multi-layered settlement with the aim to study cultural sequence. They tried to investigate the relations between prehistoric open air settlements, respective castles and the pre and protohistoric cave-sites of Mustang. The researchers selected for excavation the fortress of Dzarkot and also a settlement mound nearby Khingar. The Khingar Settlement mound is situated just opposite a series of cave system. It is situated by the roadside as

well as halfway between Muktinath and Kagbeni within sight of the fortress of Dzarkot and Dzong. The report says that the pottery samples from surface collections correspond in many characteristics with samples collected from the fortresses and also from some cave sites. Preliminary analysis of surface collections as well as hints to stratigraphy as given by modern robber trenches have given a multi-stratified situation which will show cultural sequence. The report mentions that Khingar mound is about 130m long and 80m wide. The mound is rising up to a height of about 11m above the field path at the western edge of the mound. The team laid three trenches within a grid system. From the stratigraphic data the structure in the mound seemed like a fortification structure. As it was only the result of only one season's stratigraphic digging, it is said to be incomplete to give more reliable data. Future field work will bring about more information. At the moment there is no archaeological evidence for a castle or fortress at Khingar mound but the team has found striking indications of a fortified dwelling. The report further says that the small finds or antiquities excavated at Khingar has given no reliable information about the dating of the settlement. Some of the finds yield some evidence of the spiritual and the religious culture of the settlements of the last period.

The report entitled "Faunal Remains from early houses in Khinga" by Prof. Dr. Angela von den Driesch gives an account of the findings of the study at the old houses in Khinga carried out in July and August 1991. According to the researcher the exact dating of the archaeological deposits is not yet known. But on the basis of several archaeological records it has been assumed that the remains of Khinga could be dated between 12th and 15th centuries A.D. In the report it was stated that out of 8689 pieces of bones 7065 could be identified to species and 98.7 percent of the total materials consist of domesticated animals. Most of the remains were accumulated through human intervention and are considered as kitchen refuse. There is no clear evidence for the presence of the yak in the assemblage. The researcher has tried to draw this conclusion by giving inference of very old sacred practices of slaughtering the animal and distributing the carcasses including the bones. The bones of the animal are boiled and then given to the dogs. At the end nothing remains except the horn- cores. This specific cultural behaviour might have caused the disappearance of yaks' remains in archaeological deposits. To quote the report," The percentages of bone finds from the other livestock such as horse, mule, donkey, sheep, goat, dog, cat and chicken fits neatly into the pattern of modern times except from meat of equids."

"Tibetan sources on Muktinath-Individual Reports and Normative Guides" by Dr. Franz- Karl Ehrhard, the Tibetologist, gives an account of Muktinath as mentioned in historical documents. He has given the account of the journey of Kah-thog Rig' dzin Tshe-dhang nor-bu in the year 1729. He came to Muktinath from Dolpo. Kah-thog Rig' dzin Tshe-dhang nor-bu (1698-1755) had described his journey of the sacred site in the following words - "I went to "Hundred and some springs", the renowned holy spot, revered by both Hindus and Buddhists which is called Mu-mu-ni-se-ta or mu-khum-kse-ta-sata in border dialects. It is a place where a natural fire burns on rock and water and where dakinis mass together like clouds."

Dr. Eharhard has also quoted Tibetan texts of 16th to 19th centuries. Dr. Eharhard further makes mention of a visit of young Tibetan priest in the holy site of Muktinath. He remained there for three years. The description of his sojourn which began in 1528 provides first of all insight into the early period of Mustang as a region dominated by Buddhism and secondly shows Muktinath to be a place of pilgrimage for Nepalese and Indian Kings. He also makes mention of two biographies of the 17th century on the ruling families of the fortresses beneath the shrine of Muktinath.

"Settlement Processes and the Formation of States in the High Himalayas Characterized by

Tibetan Culture and Tradition - Concept and First Results" by Prof. Dr. Willibald and Dr. Perdita Pohle highlights the activities of Nepal German research programme conceived to last for a period of 5 years. To quote them, this is a interdisciplinary project. With a primary base in humanities and cultural studies it was initiated by Tibetologists and architectural historians. It was designed by representatives from the fields of settlement archaeology, historical settlement, geography and ethnology. Methodologically it included the disciplines like natural and engineering sciences, e.g., dendrochronology, photogrametry and cartography. The scope of inquiry and thrust of the research are related with the programme which concentrated on the whole High Himalayas and the field work is concentrated on exemplary areas in the Mustang district of Northern Nepal. The other site mentioned by the researchers is the high mountain valley of the Indus in Ladakh which does not come under the domain of Department of Archaeology. The reasons of selecting the sites as mentioned by the researchers are due to their settlement history which dates back to prehistoric times. Preliminary work has shown a great amount of historically exploitable sources, mainly written sources but also others bearing archaeology, architectural and settlement history.

According to the researchers the settlement processes and formation of states in High Himalayas should not be viewed in isolation from the likewise constantly changing natural environment, the depending and reciprocal relations between man and the not seldom threatening aspects of nature in the high mountains. Therefore, the research project is said to be an effort to establish highly specialized disciplines out of their isolation by selecting themes and research topics which can be dealt only through an interdisciplinary approach. To quote the researchers, the High Himalayas are a habitat of extreme living conditions for humans. The rough topography, the inhospitable features of the high mountain climate, the threat posed by natural hazards (earth-quake, landslide, outburst of glacier lakes) are ecologically limiting factors for the economy of the high mountain dwellers. A deeper understanding of the processes of settlement formation and decay can only be achieved if one starts out on the basis of an environmental analysis that is relevant to present conditions and integrates questions concerning history of the ecological environment into the overall picture. To quote them again, the High Himalayas today represent the most significant refuge for Tibetan religion and livelihood.

The research has shown that the ruins of settlements, fortresses/palaces and monasteries, abandoned fields and deserted groups of once inhabited caves are a striking feature of the cultural landscape of the High Himalayas. The study gives an account of the natural hazards which led to the abandonment of sites in the region of Baragaon in southern Mustang. Such sites included cave settlements, abandoned villages and fields, fortresses/palaces and monasteries which lie along rivers between 2800 and 3800m as well as in the valley basins of the side valleys of the Kali Gandaki. It also gives the reason of cultural influence in Mustang by different cultural and ethnic groups. The reason has been its geographical location and command of trade route to the high plateau of Tibet from Nepalese Himalayan foothills and India. Primarily, grain from the south was transported in large caravans to Tibet and salt from the north to Nepal and India. So to control over such routes was meaningful in the past for political power as well as economic gain.

"Geographical Research on the History of the Cultural Landscape of Southern Mustang" by Dr. Perdita Pohle is a report of the project carried out with the object of studying the settlement history of natural and cultural landscape of Mustang district. With the aim in view the project comes within the bounds of historical genetical settlement geography. So it is concerned with the

questions linked to the past, e.g., the origin of settlements, motives for the founding of settlements and the preference for particular sites as well as genesis of settlements. The project tried to trace the development of settlement region stepping into the past from the present. How the natural, economic, social and political forces influenced the settlement process, how the current situation helps to better understand the past cultural landscape have been the issues adopted by the project. To get such insights the study was localized in Kagbeni's cultural landscape. Dr. Pohle has given several reasons to begin the geographical settlement studies in Kagbeni.

The study gives a detailed account of natural setting of Kagbeni, fertility of soil, irrigation water from the riverbed of Dzong Chu, the relatively flat terrain which facilitates the layout of houses and fields etc. Besides the topography, the climatic condition of Kagbeni has also been mentioned. It is openly exposed to strong wind. The land use pattern has been studied in detail. The study also gives an account of traditional law of inheritance in Ka Kpa society, i.e., law of primogeniture. Mention has been made about the cropping system, harvest yields, settlement pattern, evidence relating to the founding of the geneses of the settlement, layout of physionomy of the settlement. Kagbeni comprises 18 to 19 villages nowadays. In the old administrative system of division of Mustang district - Lo, Baragaon, Panchgaon and Thak, Kagbeni is in the region of Baragaon.

Kagbeni's environmental features show that it is a dry high mountain region inhabited by Tibetan speaking population. The region is characterized by Tibetan culture and tradition. It is located along one of the historically most important trade routes of Nepal. As witnesses of the past, it has several written sources (Nepali as well as Tibetan documents). There are settlement relics in the close vicinity of Kagbeni, i.e., the anthropogenic caves on the other side of Kali Gandaki, the ruined settlement of Phudzeling and Kak Nyingha and the dilapidated palace ruins in the middle of the village. Kagbeni also provided favourable conditions for interdisciplinary collaboration. The Tibetologists have been analysing historical texts. The architects have prepared detailed ground plans of the locality based on terrestrial photogramatic survey. Samples of building timber are being taken for dendrochronologial dating.

"Cartographic Activities in the Mustang District" by Prof. Dr. Robert Kostka gives an account of the space related research programme. The thematic maps were based on the study of geographical, historical, archaeological and other specialized fields in High Himalayas. For space related scientific investigations a lot of cartographic work was done. The study clarifies that maps at the scale of 1:200,000 and 1:50,000 using space-borne LANDSAT images and existing sheets of the one inch map of Nepal has been produced for Mustang district for large scale maps i.e. 1:10,000 and 1:2500. Hasselblad aerial images were taken with a fisheye lens and results of terrestrial photogrammetric and geodetic fieldwork were used. Thematic maps for different areas of interest containing only special research-related information were prepared. Study maps for fieldwork were prepared, then base maps to localize thematic items. Results of research work were presented in visual ways.

This is the second special issue of Ancient Nepal which focuses mainly on the results of the research activities of Nepal German Project on High Mountain Archaeology. The issue will be more useful for the researchers as well as scholars who have interest in archaeological exploration. Further research in the northern part of Mustang will make more exposure on the ancient as well as the modern culture and civilization of this part of the country.

- Khadga Man Shrestha

Excavations at Khingar Mound 1991

Nepal-German Project on High Mountain Archaeology

Dr.- Hans G. Hüttel
Archaeologist

This communication gives an account of the presuppositions and of the main results of the Nepal-German excavations at the Khingar settlement-mound in the Mustang district. These excavations were executed by the German Archaeological Institute in co-operation with HMG Department of Archaeology. Thanks to the gracious permission given by the Director General of HMG Department of Archaeology a joint expedition represented by Mr. Ch. Tripathi from the Department and by Dr. H.-G. Hüttel from the KAVA[1] of the German Archaeological Institute (Bonn) started excavations at Khingar in August 1991.

These excavations mean the first step towards an "archaeology of protohistoric and medieval settlements and fortresses in Mustang" as it is outlined by a special research programme of the German Archaeological Institute within the scope of the "Nepal-German Project on High Mountain Archaeology"

In close collaboration with other scholars of different branches as in particular settlement geography, historical geography, tibetology and medieval history an archaeology of forts and fortified places ("castle archaeology" as you may call it) can contribute fundamental data to the settlement history of the Nepal-Tibetan borderlands in the northern Himalayas. As medieval Mustang (= upper and lower gLo) is very short of historical sources relevant to political history archaeological sources necessarily occupy an important position in reconstructing the medieval history of Mustang.

Above all castles or fortresses form a source-group of high evidence within an "archaeology of the early state and the formation of sovereign authorities". Block-castles or frontier fortresses in particular obviously prove the spatial effect of actions taken by the sovereign authority. Castle building as a reflex of a "castle policy" within a certain strategy of territorial organization provides evidence of governmental efficiency and

persistency as well as the range of government power. Within consistent settlement areas frontier fortresses as well as forts built to protect the trade-routes are evidence of a uniform political will, i.e. of a centralized region which is as one at least with regard to the means and manifestations of its political representation.[2]

Chronological or/and spatial density of castle building can give us standards to describe different grades of centralization and territorialization or vice versa tendencies of disintegration (particularism/separatism). As to the economy of the medieval strongholds the excavated materials provide evidence of the range of economical and cultural relations from local self-sufficiency up to far distance trade.[3]

Castles as military architecture in general are usually among the most characteristic features of its age less in respect of style than with regard to technique and the socio-political aspects of their strategic function.

As there wasn't executed previously any excavation either in the Muktinath Valley nor in Mustang (and Western Tibet) on the whole archaeological work first needs basic research laying a stratigraphical foundation for future research. So before digging up castles or fortresses in southern Mustang we made up our mind first to excavate a small but multi-layered settlement which shows promise of yielding a cultural sequence to serve as the backbone of a future chronology system of Mustang and adjacent regions in the northern Himalayas.

Another aspect of our investigations are the relations between protohistoric open-air settlements resp. castles and the pre- and protohistoric cave-sites of Mustang sometimes spoken of as "cave-cities".[4]

Were cave-sites and the protohistoric settlements nearby occupied at the same time by different people of different cultural levels or by men of different social status within the same community? Do cave-sites and open-air dwellings represent complementary forms of synchronous settlement or do they testify different evolutionary stages of high mountain settlement?

What about the people at the fortified places in northern Mustang or in the Muktinath Valley? Have they conquered the valley and expelled the former population from places then fortified? Did they take refuge in the caves?
Were the fortresses built up to protect men and trade-routes or to subject the original population to agressive intruders either from the north (may be gLo or Tibet) or the west (e.g. Jumla)?

Some of the early cave dwellers may be called "troglodytes". Nevertheless, the age and the chronology of the caves on the whole is still unknown. We know that the caves don't form a homogenous unit but were occupied in different periods prehistoric as well as protohistoric and modern ones.[5]

To make final choices about the sites to excavate I have visited in 1990/1 many sites in the upper Kali Gandaki region as also in the Muktinath Valley and in the vicinity of Lubra (fig. 1: map). In agreement with HMG Department of Archaeology we selected for excavation the fortresses at Dzarkot as also a settlement mound nearby Khingar.

The Khingar settlement mound (also called Khingar II or Khalong) completely comes up to our exspectations and presuppositions:

a) the mound is situated just opposite an extended cave system

b) situated directly by the roadside the mound is half-way between Muktinath and Kagbeni within sight of the fortresses at Dzarkot and Dzong

c) the pottery samples from surface collections correspond in many characteristics with samples collected from the fortresses as also from some cave-sites

d) preliminary analysis of surface collections as well as hints to stratigraphy as given by modern robber trenches prove a multi-stratified situation which let exspect an according cultural sequence.

The Khingar mound is about 130 m long and 80 m wide. The mound is raising up to a height of about 11 m above the field-path at the western edge of the mound (fig. 2: contour map of Khingar mound). In the northwest the mound is bounded by Tashi's farm, in the south and west by stone walls fencing the surrounding fields.

From the surface we collected many pottery samples of great varieties as to shape, decoration and surface treatment. Many structural remains still to be seen on the surface level of the mound (fig. 2) prove a high density of architectural features all over the mound.

The joint Nepal-German team started the first excavation campaign within the "High Mountain Archaeology Project" at August 1st. This campaign we have concentrated on Khingar mound where our first season came to an end at September 17th.

We have laid three trenches within a grid-system. The grid-system was laid out with coordinate axis oriented strictly (magnetic) north. The intersecting point of the axis marks the datum plane resp. the benchmark of the excavation which is set at will to 100 m. The coordinate axis subdivide the mound in four sectors A,B,C,D. Each sector is subdivided in areas measuring 10m x 10m. All areas are designated with Roman numerals and are subdivided in 100 metersquares ordered horizontally from the upper left each marked with Arabic numerals.
Contexts or features are marked with F numbered with Arabic numerals. The scale usually employed for plans (plana and sections) is 1:20 except few cases like burials when a 1:10 scale was adopted.

We have laid 2 trenches one by one with a baulk of 2m in between in sector B. Each trench measures 8m x 6m. Trench B XXI was taken down to a depth of about 2,50 m, whereas the last level reached in B XXII lay 1,60 under the surface level. A third trench we have opened in Sector A near the southwestern fringe of the mound. This trench AI/XI measures about 12m x 8m and came down to a depth of about 2m under the surface level (fig. 3 - 5).

Whereas the B-trenches are strictly laid within the orthogonal grid, the A-trench follows the contours of a huge building to cut it out of the mound like a piece of cake. This structure is called H(ouse)1; its eastern wall is towering up to 4m above the modern surface level inside the structure. We have excavated this structure almost completely.

In AI/XI we have observed at least 5 floors better called tramplings in all rooms of the structure except the small room H 1/4. As it seems this room may be interpreted as a remain of an older structure integrated later in the younger structure of H1.

Layer-stratigraphy as well as the stratigraphy of structures and architectural features indicate a multi-phase settlement which presumably covers

preceding structures of at least one elder settlement period of Khingar mound. In trench B XXI there is also strong evidence for an elder settlement preceding the younger period of house 2: In my opinion e.g wall 39 and most likely the drainage "channel" in the corridor between H(ouses) 2 and 4 are representing the elder occupation of the mound.

After only one season stratigraphic data are of course still too incomplete to give reliable data. What we know for certain now is the evidence for at least two settlement periods. We learn from the structures of the younger period that it can be subdivided in two (more probably three) phases of using. This is additionally proved by small partition walls in between the corridors one built upon another but each separated by a small almost sterile layer.

Within the younger period we have observed an interesting development which is well testified in trench AI/XI. Here we can study not only the tendency to enlarge the house but also to fortify its walls. The outer walls near the fringe of the mound are more than 1 m thick. So is the wall 12 (masonry with exterior faces with rubble interior; in German: Zweischalenmauer) which is more likely a fortification structure than a wall of a normal dwelling.

Future fieldwork has to look for other fortification structures in particular along the mound's fringe. At the moment there is no archaeological evidence for a castle or fortress at Khingar mound, but we have found in trench A striking indications of a fortified dwelling at least. Additional hints to a fortified place are given by the oral tradition of Khingar which connect the settlement mound with a place named Khalong. Khalong is said to be the castle-like residence of a local chief or "king", "the master of 100 horses ". The big house in AI/XI indeed reminds us to the "huge towering houses" of some Baragaon chieftains which were described by Fürer-Haimendorf as well as the structural remains on the whole remind us to "houses built wall to wall, in some cases forming fortress-like clusters" (e.g. Tetang).[6]

In the first campaign we have not found any evidence for warlike events either traces of destruction or any other effects of violence. None of the skeletons we have excavated in the houses indicated violent death. As far as we can judge all the dead found at Khingar died a natural death. They were deposited in the houses, but it seem that they were buried regularly.[7]

Among ca. 6000 pottery sherds only 5% (i.e. about 300 pieces) are of reliable diagnostic value as seen from the variety of shapes, decorations and surface treatment. As we have no cultural or pottery sequence for Mustang and the northern Himalayas imports from the south, i.e. from India, from Tarai or from Kathmandu Valley are of great importance especially with regard to a chronology based on historical dates. Among the predominant yellowish, red and brown wares of local/regional origin we have found a lot of red polished and red slipped wares as well as some painted (black on red) and black enameled pottery (Fig.). Similar forms and fabrics from the south are usually dated or found in contexts from the Licchavi up to the early Malla-period. Some of the red ware sherds with incised graffiti as well as some stamped and rouletted (?) pottery could even be dated earlier. When dating south asian pottery we always should have in mind that we often know the starting point of pottery developments the end of which, however, is unknown in most cases. This situation is due to the lack of excavations in the late historical period which is up to now too short of strati-

graphies to give reliable data for the exact time-range of many pottery forms and wares. A thorough pottery study in preparation will help to answer the problems connected with the chronology and provenience of the Khingar pottery.

The small finds or antiquities excavated at Khingar has given no reliable information about the dating of the settlement. Some of the finds yield some evidence or the spiritual and religious culture of the settlement's last period. Worth to mention are in particular a tsacha with an abbreviated inscription "Bud(dh)a" written with Tibetan characters. Near the tsacha two miniature vessels were found and a flat fragmented red brick-tile with the Tibetan inscription "...me hum" (most probably the mantra: Om mani padme hum). These antiquities were all found in the upper levels of house 1 (Fig. 5).

Future research at the Khingar settlement mound has to prove whether there have settled tibetanized people or people of Tibetan stock and of Buddhist belief as indicated by these finds. The place name "Khalong" hints to an elder non-Tibetan stratum of Se-skad speaking people and so may be connected with the early medieval kingdom of Se-rib.[8]

Notes

1. KAVA = Kommission für Allgemeine und Vergleichende Archäologie, i.e. Commission for general and comparative archaeology.

2. H. Jankuhn: Einführung in die Siedlungsarchäologie (1977) 21.

3. From castle excavations we can exspect "better" materials corresponding with the higher social level of castle owners. Many frontier fortresses, however, were occupied by small garrisons only. In such forts archaeologists usually found standard military equipment: cp. A. Stein, Ruins of Desert Cathay (1912) 1:111 seq.; ibid. 350 seq.

4. G. Tucci: Journey to Mustang (1952; repr. 1982) 53 seq.

5. Prof. D. Schuh, Prof. R. Bielmeier, Dr. Chr. Cüppers, Dr. A. Simons and D. Gebauer have undertaken many cave surveys in the eighties. Especially from the results of surveys made in 1986 and 1990 we learnt much about the different using of caves in Muktinath Valley as well as about distinctive cave datings.

6. v. Fürer-Haimendorf: Himalayan Traders (1975) 160 seq.

7. Together with some physical anthropologists from the University of Gießen, Germany, I'll give a special report on the Khingar skeletons in the next issue of this journal.

8. D. P. Jackson, Notes on the History of Se-rib and near-by Places in the Upper Kali Gandaki Valley. In: Kailash VI, 1978, pp. 195 - 228.

Figures

Fig. 1 Map: "Upper Kali Gandaki Valley".

Fig. 2 Preliminary plan: "Khingar Settlement Mound".

Fig. 3 Trench B XXI: "Sturctures of the last settlement period; the water-channel as well as wall 39 in House 2/1 belong to an older settlement period".

Fig. 4 Trench B XXII: "Structures of the last settlement period".

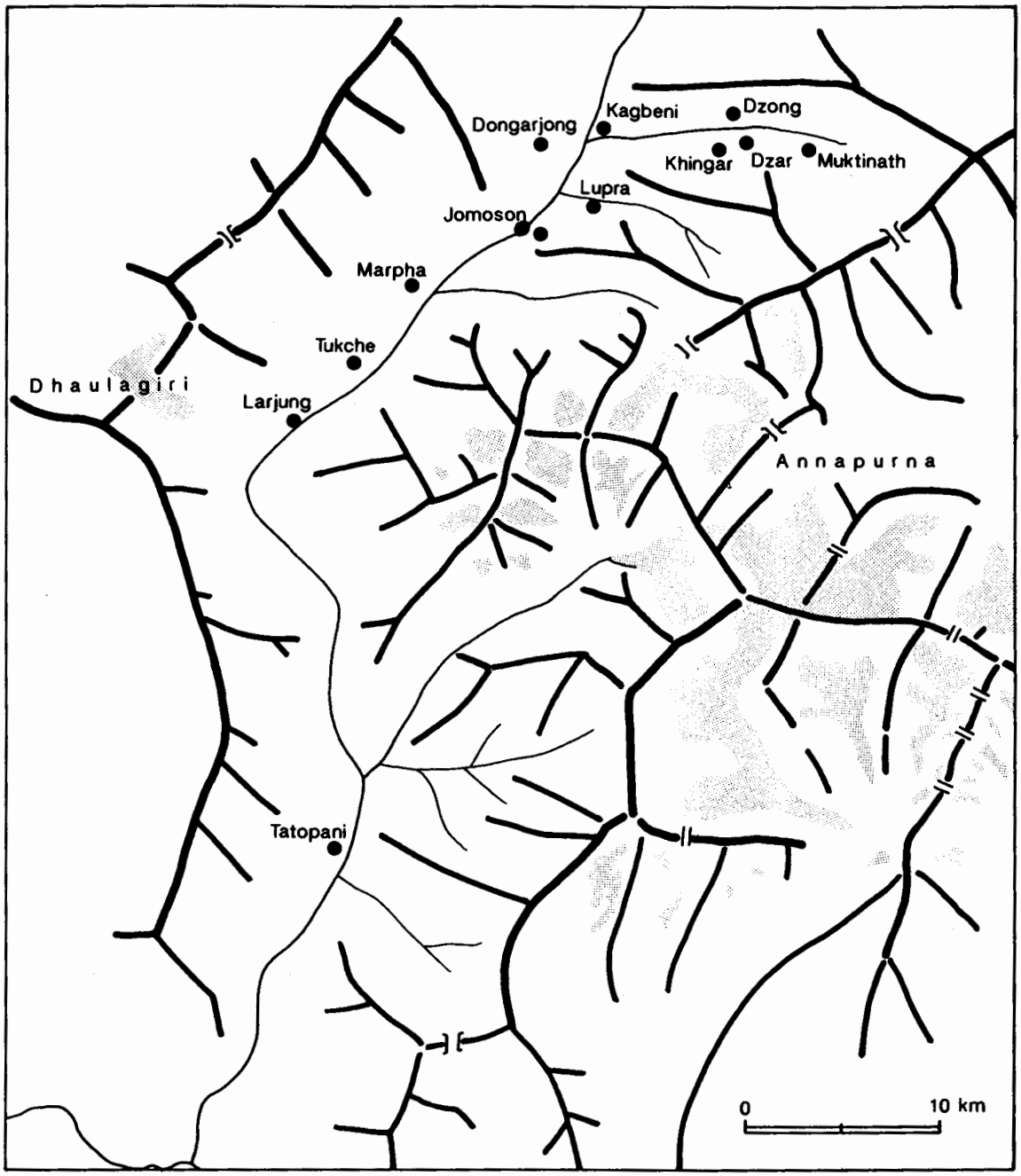
Fig. 5 Trench A I/XI: House 1

Fig. 6 Pottery from the south: 1 black enameled; 2-4.6 red slipped; 5 red polished; all from last settlement period.

Fig. 7 red-yellowish coarse wares: foreign shapes, but local fabrics (?); last period.

Fig. 8 Pottery from last settlement period: 2 black barbotine 1.3-8 red-yellowish coarse wares; 4 rouletted.

Fig. 9 Globular pots from last period: black-brownish coarse wares; the most typical shape among Khingar pottery.


Dongarjong
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Khingar
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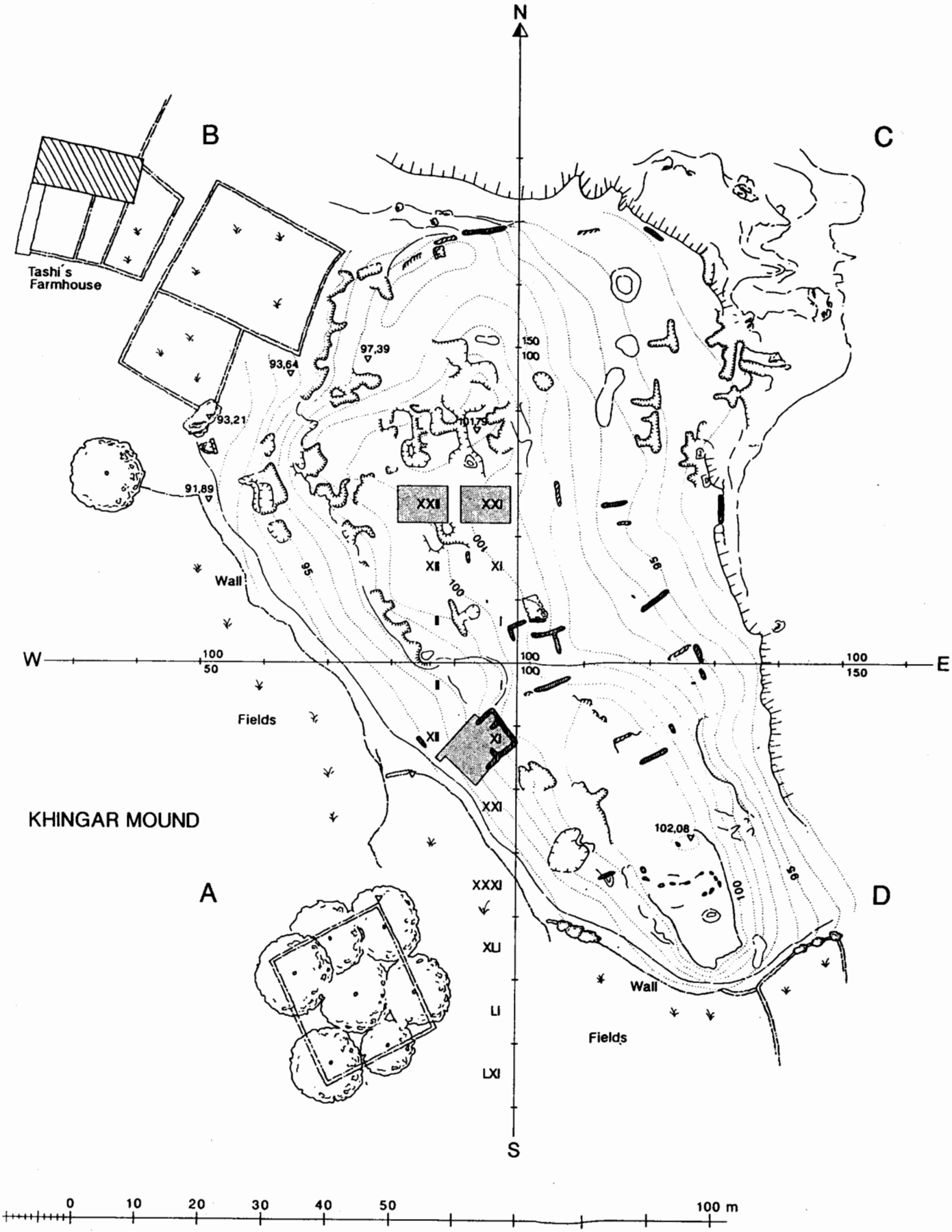
N
S
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Tashi's Farmhouse
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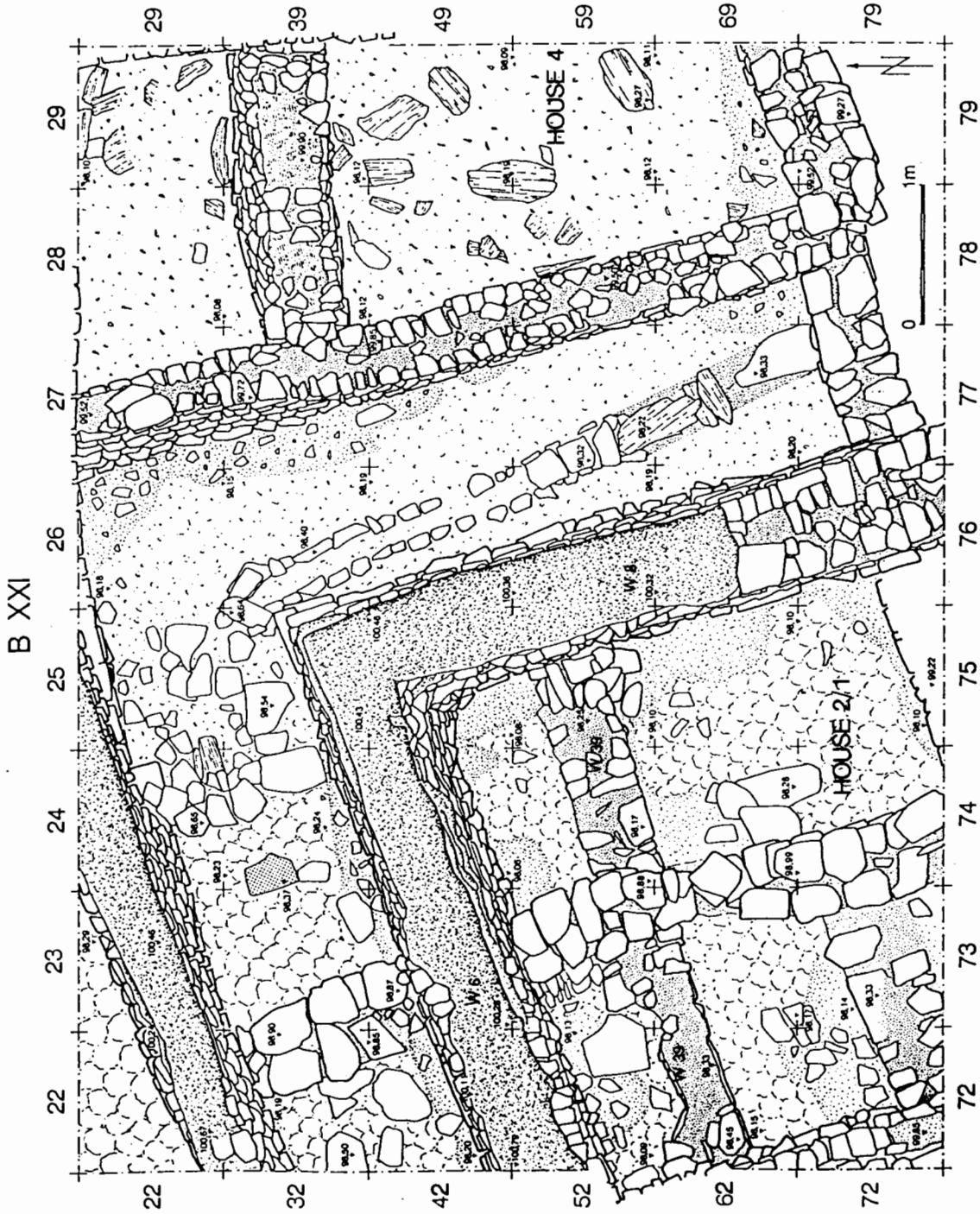
B XXI
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W. 6
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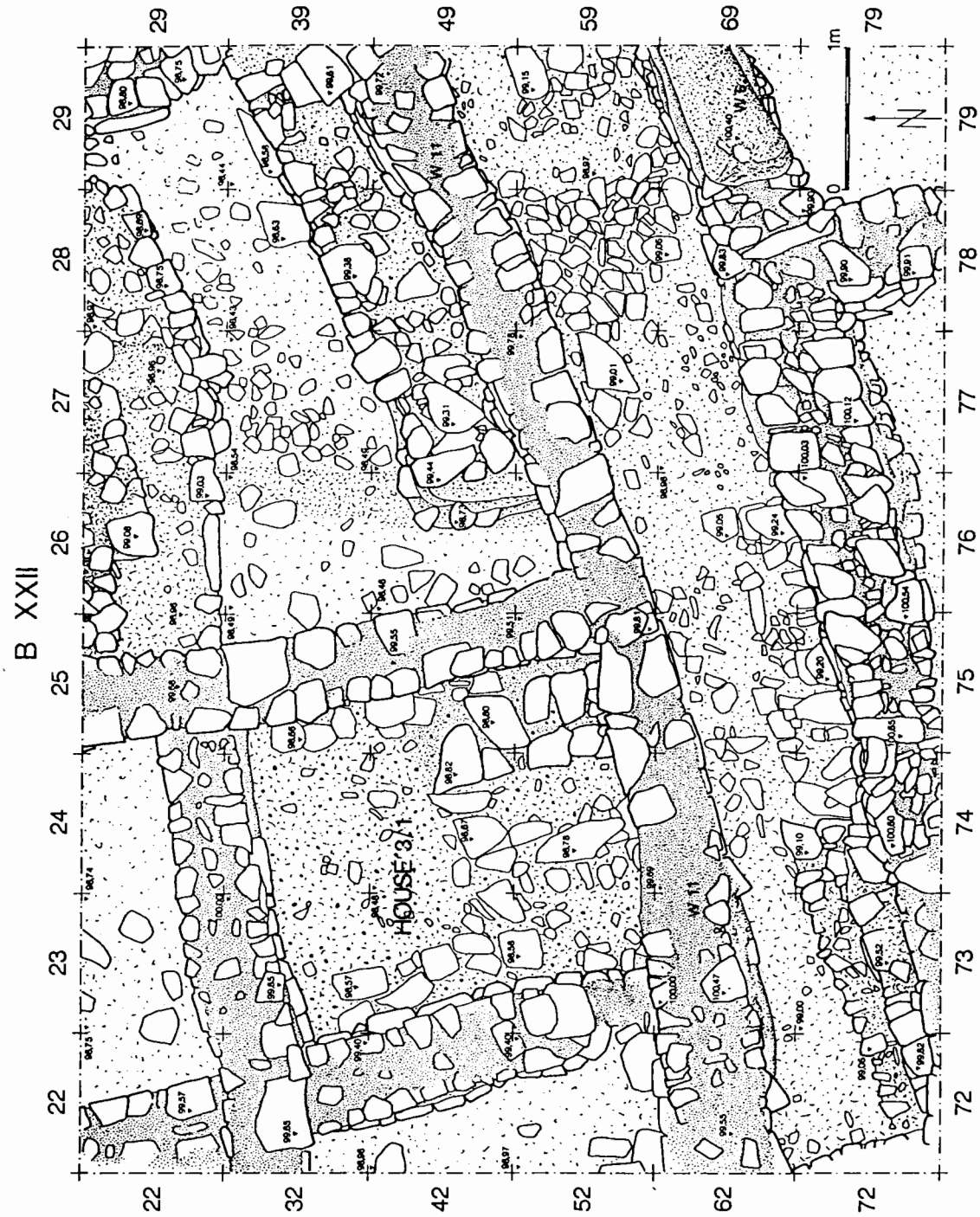
B XXII
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W 1/1
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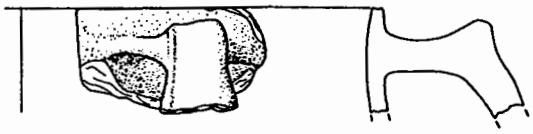

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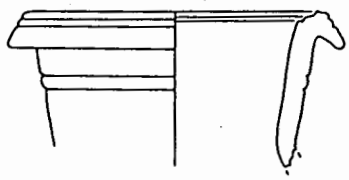

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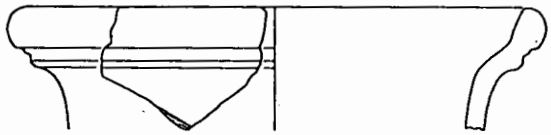

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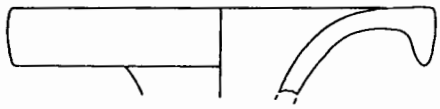

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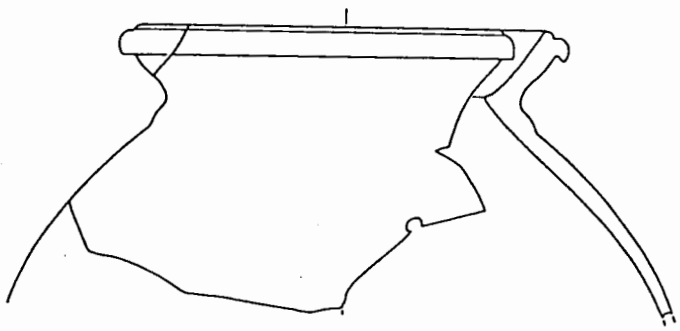

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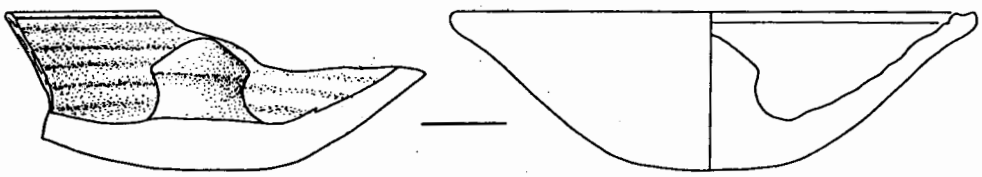

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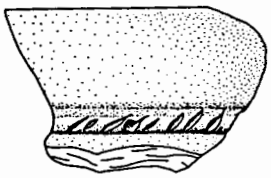

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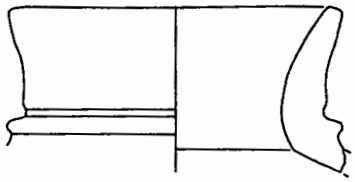

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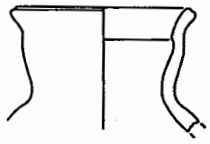

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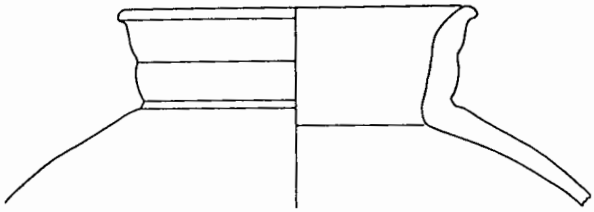

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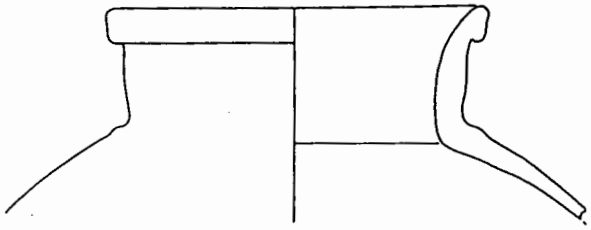

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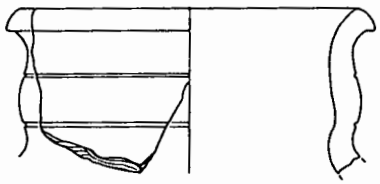

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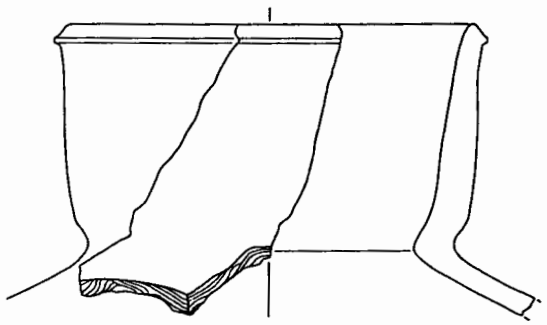

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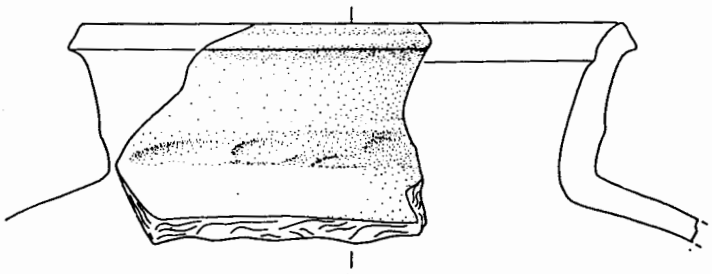

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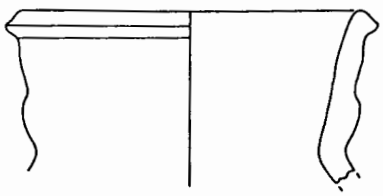

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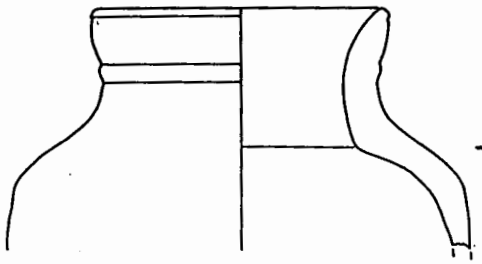

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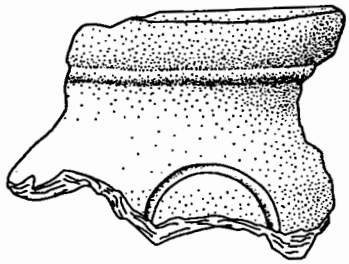

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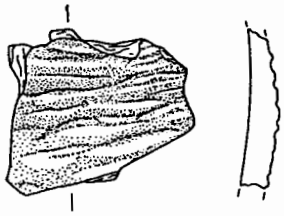

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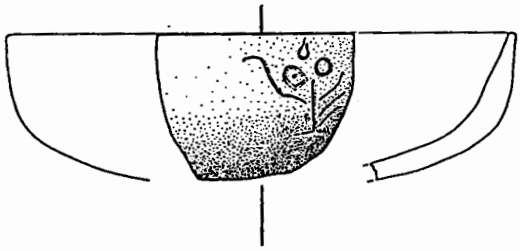

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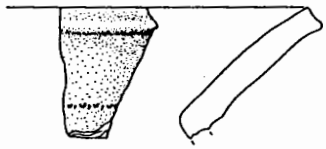

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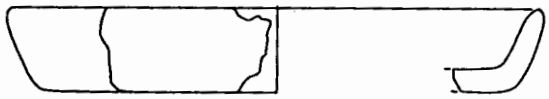

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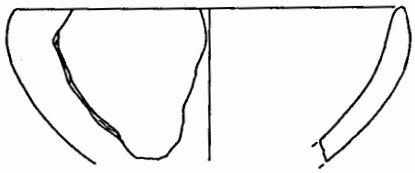

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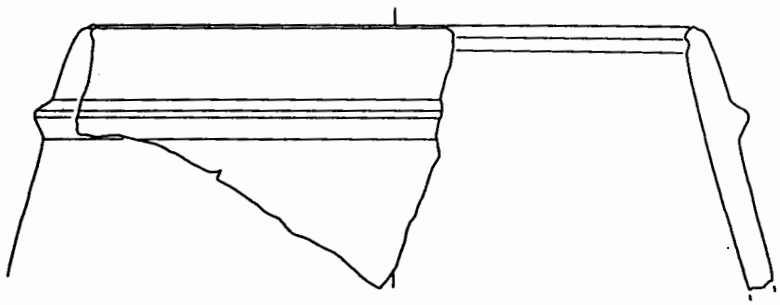

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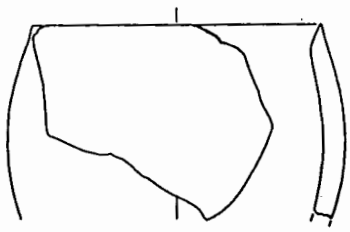

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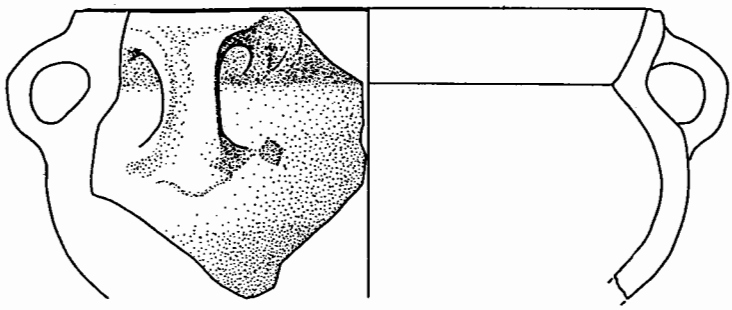

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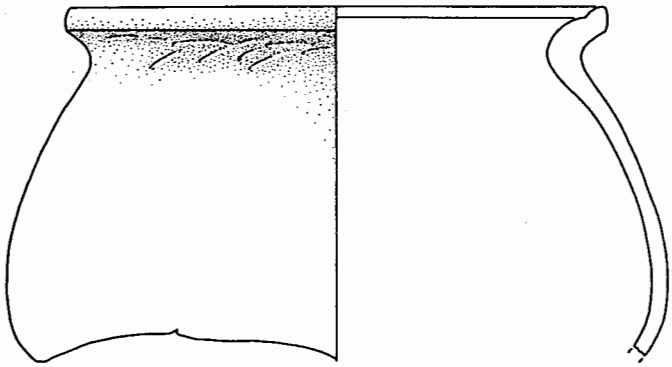

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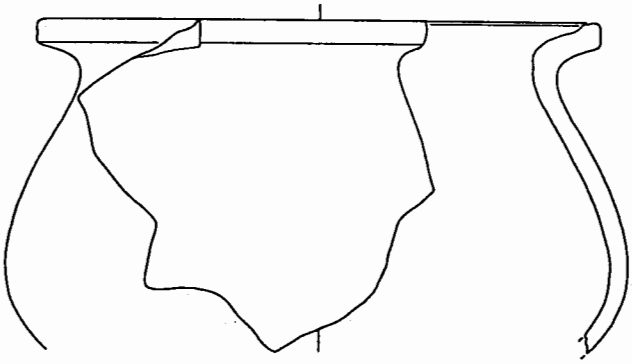

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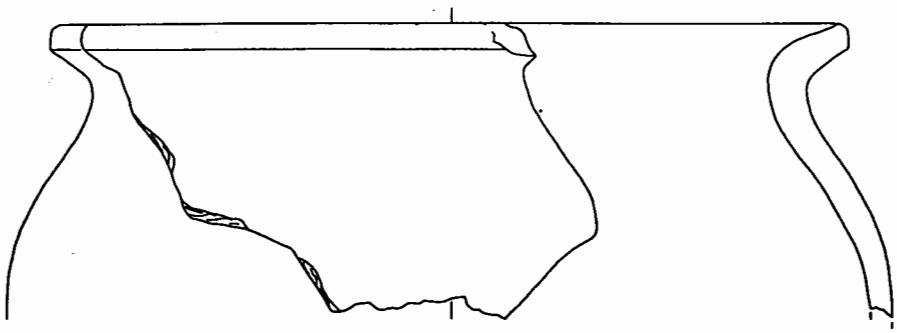

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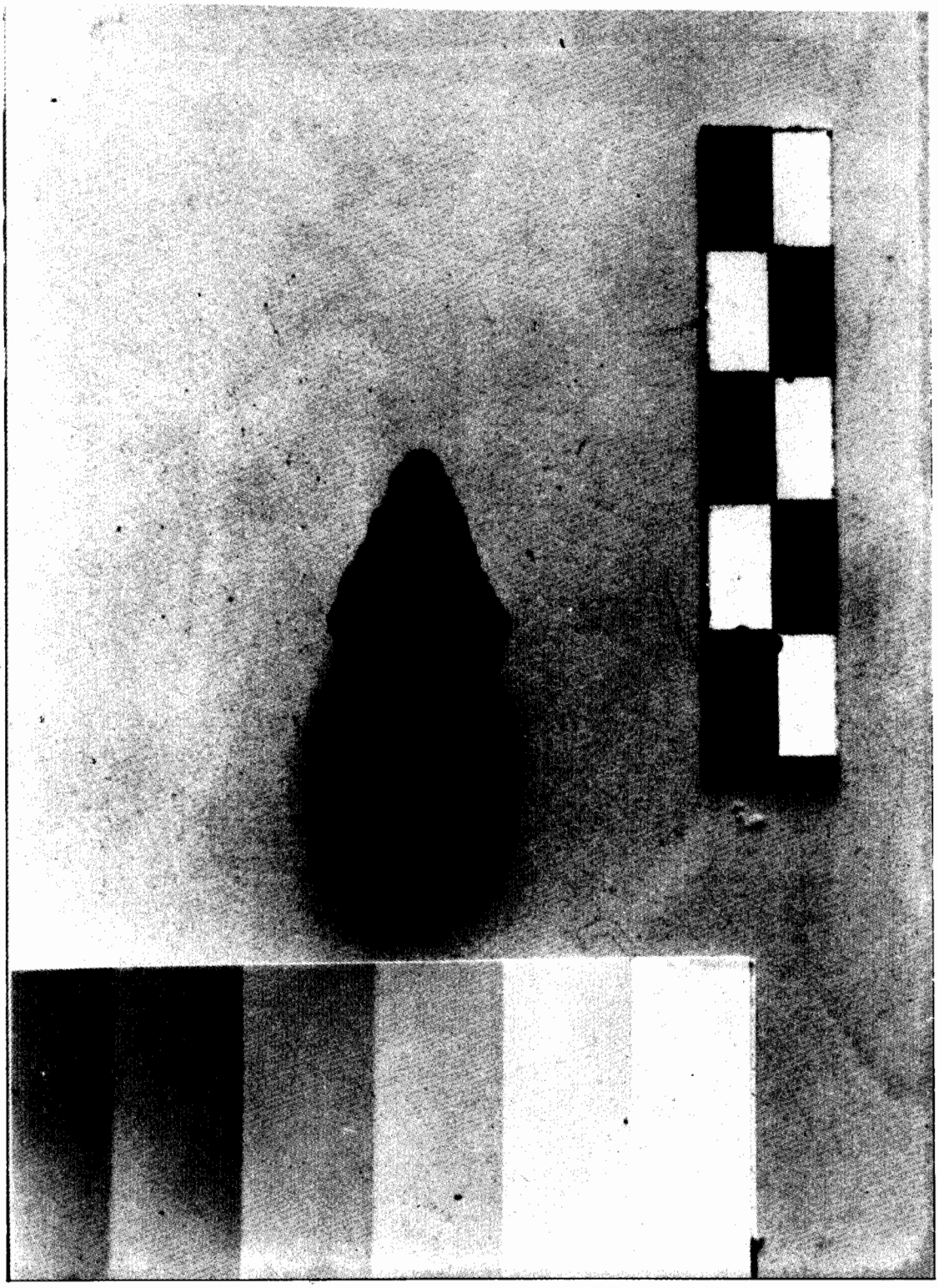

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Faunal remains from early houses in Khinga

District of Mustang/Nepal

- Prof. Dr. Angela von den Driesch

Veterinarian Archaeologist

Introduction

In the frame of an interdisciplinary historical project sponsored by the German Research Foundation (Deutsche Forschungsgemeinschaft) a series of animal bones excavated in the ruins of several old houses in Khinga was analysed. The excavations were carried out by members of the KAVA/Germany under the direction of Dr. H. G. Hüttel in July and August 1991. Although the exact dating of the archaeological deposits is not yet known, it is assumed, on the basis of several archaeological records, that the houses in question were inhabited during the 12th and 15th century A. D.

8689 fragments of bone, of which 7065 could be identified to species or genus level (table 1) were counted.

Animal species represented in the material

Table 1 presents the total number of fragments per species without regarding stratigraphy. The faunal assemblage consists primarily of domesticated animals which amount 98.7 per cent of the total material. Evidence for hunting activities is very scarce, all the more, considering that some of the wild animals, e.g., mice and rats do not belong to the cultural context. They were either brought in dead by dogs and cats or were later intrusives. One must also reckon with regurgitated bones (by owls) which may be true, for example, for the bones of the pika, *Ochotona roylie*.

Domestic species present include sheep, *Ovis aries*, goat, *Capra hircus*, cattle, *Bos taurus*, yak-cattle-hybrids, *Bos taurus* X *Bos mutus grunnies*, horse, *Equus caballus*, mule,

donkey, *Equus asinus*, pig, *Sus domesticus*, dog, *Canis familiaris*, cat, *Felis catus*, and chicken, *Gallus domesticus*. Most of the remainders of these species were accumulated through human intervention and can therefore be considered as kitchen refuse. For some exception of the equid remains and not regarding the bones of small animals mentioned above, all bones (including cattle !) show cut and chop marks. This and the fact that almost no bones are complete and along with the numerous unidentifiable bone splinters show clearly that the animals were slaughtered and their carcasses dismembered afterwards for the meat consumption. The majority of the material derives from sheep and goat (table 1). Thus small livestock appears to have had a major importance in the time of the houses existence. The same occurs today in the villages situated in the Dzong Khola valley. Goat bones made up more than double than sheep bones, but due to the high fragmentation, the great bulk of sheep/goat bones could not be identified to species level.

Another fairly impressive group of the sample is that of "large bovids". The smaller bones of this group can easily be recognized as belonging to cattle. Cattle was almost as small as the animals usually kept in the present villages of the valley. Today, the cows measure between 80 and 90 cm shoulder height. In the earlier times they might have grown up to 5 cm higher. The bigger bones of this "large bovid" group (table 1) seem to derive from yak-cattle-hybrids. There is no clear evidence for the presence of the yak in the assemblage (see below). Among equid bones those of domestic donkey could be separated by their smallness and relative slenderness. Horse bones are larger and heavier built. But, as mules, *Equus asinus male* X *Equus caballus female*, are as tall as horses. it is difficult to differentiate between postcranial skeletal remains of horse and mule, especially when dealing with broken settlement refuse.

Of special interest are the bone finds of pig. At present no evidence for pig keeping could be stated in the villages of the Muktinath valley. In Nepal it is restricted to the lower cast of Newar and Hindu (Epstein 1977, 81). We saw pigs "grazing" at the border of the Kali Gandaki near Jomsom. The animals, an ameliorated European breed were searching for plants, roots and larvas of insects in the sand. They are kept for the stationed military troops in Jomsom. The presence of pig bones in the deposits of the early houses in Khinga clearly demonstrates that pig keeping is possible to an altitude of 3500m above sea level or even higher.

Chicken played an subordinate role in the economic life of the farmers as they do today. The cold climate does not allow permanent and regular breeding of eggs. Therefore, most of the chicken which live in the modern villages have been introduced from lower parts of the country. May be that this was done already in earlier times.

Dogs were abundant over cats (table 1). This fits best on observations of today. People do not like cats very much because they are regarded as rivals to human food (e.g. milk), whereas dogs, besides their use as shepherd and watching dogs, play an important role as scavengers of human food residues in the households and therefore are kept in great numbers.

As already mentioned the hunting of big game was of minor importance. The only species which contributes with a fairly great number to the faunal assemblage is the Blue sheep, *Pseudois nayaur* (table 1), a sheep-sized wild ruminant which populates already in our days over the high slopes of the mountains up to the snow border. The horns

of the animals are, like the horns of yak and dzos, appreciated by the people as apotropaic symbols and for this purpose put on the roofs of the houses (fig. 1). From the musk deer, *Moschus mochiferus*, the only small deer which can live in rather high altitudes only three postcranial bone fragments could have been identified.

The preservation state of these bones demonstrate that the meat was eaten, whereas the bobak, *Mannota bobak*, is only represented by one incisor of the lower jaw. This beautiful sable formed teeth with its russet coloured front side could have served as jewellery and do not necessarily come from an animal killed in the vicinity of the village. Today hunting is forbidden.

The importance of domestic animals as meat suppliers

Bone weight counts of the domestic stock are given in table 2. As bone weight correlates directly to body weight the percentages of the bone weights reflect the value of each animal group in the human diet. More than 50 p.c. of the meat consumed derived from large bovids - cattle and yak-cattle-hybrids. The plentiful small ruminants (table 1) provided only less than 40 p.c. of the animal protein (table 2). Equids - horse, mule and donkey - and pigs can be considered a small but welcome addition to the diet. Game animals contributed only very occasionally.

The role of the yak

As already said there is no clear proof for the presence of yak bones in the faunal material. Admittedly yak, cattle and their hybrids have a similar osteology. But there are some skeletal parts in the yak, e.g., the foot bones, that distinguish well in size and shape from those of cattle and hybrids. On the other hand the quantity of the bovid material from the houses in Khinga is big enough that one would expect some of the characteristic yak bones if the species were present. It is certainly not logical to deduce from this, that the keeping of yaks was still unknown to the people of the Muktinath valley during early medieval times. A possible reason for the total lacking of yak bones in the faunal material can be found in the special slaughtering and dissection techniques which are already practiced today. At present, the procedure of slaughtering involves the following steps : first, the animal is thrown down and put on its back (fig 2). The butcher is then sitting besides the animal's head and sticking a long knife into the arch of the aorta or the left ventricle of the heart from the front side of the chest. The yak, which was not dazed by a blow on the head before, dies very slowly as blood enters into the thoracic cavity. About 15 to 20 minutes later, a man pours water from a small vessel into the yak's mouth (and occasionally into the ears) (fig. 3). This serves as a symbolic act which is supposed to close all openings of the body in order that the soul of the animal can leave the body through the head. The body is then dissected. After having opened the chest, the men involved with the butchering will drink some blood and eat a bit of the meat, because in the imagination of these people, this will give them strongness and will help to withstand diseases. This butchering ritual reflects reminiscences of very old sacred practices in slaughtering animals (von den Driesch 1992).

All parts of the carcass are divided equally amongst the families who have bought the animal. Even the bones are distributed. They are smashed in small pieces and boiled and then given to the dogs. At the end, nothing remains from the former skeleton,

except the horncores and the teeth. During my many stays in the Muktinath valley I was not able to find a single bone left from a slaughtered yak. This is in sharp contrast to the regularly slaughtering of these animals in the villages. To sum up: a specific cultural behaviour towards a domestic animal can cause its complete disappearance, creating a biased situation on account of which its bones do not enter in any archaeological deposits. If this behaviour was already known in earlier times, the lacking of bone finds of the yak can be explained in this way.

Conclusions

The food debris of the early houses in Khinga reflect similarities and differences in animal keeping and meat consumption in past and modern days. In contrast to the present situation, cattle and cattle hybrids were slaughtered and their meat consumed by the people in the past. The same is true for pigs. The percentages of bone finds from the other livestock such as horse, mule, donkey, sheep, goat, dog, cat and chicken fits neatly into the patterns of modern times except from meat of equids. The role of yak as meat supplier in earlier times is doubtful, because no yak remains have been identified. The absence of yak bones in the archaeological material can be related back to special butchering techniques described above.

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List of Figures:

Fig. 1 Skulls and skull caps of Blue sheep on a podest on a house's roof in Samar.

Fig. 2 Slaughtering of a yak in Jharkot. The butcher sticks a long knife into the heart from the front side of the chest.

Fig. 3 A person is going to pour water from a small vessel into the yak's mouth.

Table 1. Distribution of bones by species from the early houses in Khinga/Muktinath-Valley (Excavation July/August 1991)

Domestic:	no.	p.c.
Sheep, *Ovis aries*	179	
Sheep/Goat	4.489	71.8
Goat, *Capra hircus*	403	
Cattle, *Bos taurus*	367	24.1
Yak-cattle-hybrid	1.336	
Donkey, *Equus asinus*	44	1.1
Horse, *Equus caballus,* and mule	34	
Pig, *Sus domesticus*	79	1.1
Dog, *Canis familiaris*	23	0.3
Cat, *Felis catus*	2	
Chicken, *Gallus gallus domesticus*	18	0.25
Sum domestic	6.974	98.7
Wild:		
Blue sheep, *Pseudois nayaur*	12	
Musk deer,		

Moschus moschiferus	3	
Bobak, *Mannota bobak*	1	
Rat, *Rattus sp.*	34	
Tree mouse,		
Apodemus flavicollis	10	
Wooly hare, *Lepus oiostolus*	6	
Pika, *Ochotona roylei*	10	
Unidentified rodents	3	
Himalayan vulture,		
Gyps himalayensis	1	
Rock pigeon,		
Columba rupestris	4	
Chough,		
Pyrrhocorax pyrrhocorax	3	
Mountain sparrow,		
Passer montanus	2	
Snow trout,		
Schizothorax sp.	2	
Sum wild	91	1.3
Total of indentified bones	7.065	100
Unidentified mammal bones	1.624	18.7

Table 2 Bone weights (in grams) of species which were the most importatnt suppliers

Domestic	no.	p.c.
Sheep and goat	27.026	37.6
Large bovids	39.882	55.5
Equids	3.877	5.4
Pig	890	1.2
Sum	71.675	99.7
Hunted game		
Blue sheep	172	
Musk deer	30	0.3
Hares and pikas	12	
Sum	214	0.3
Total	71.889	100

Tibetan Sources on Muktināth

Individual Reports and Normative Guides*

Dr.- Franz Karl Ehrhard

In the year 1729 Kaḥ-thog Rig-'dzin Tshe-dbang nor-bu (1698-1755) left the territory of **Nub-ri** and made his way across the Tibetan high plateau (*byang thang*) towards Mustang (*mnga' ris glo bo*). Before and after spending several months at the court there and prior to heading on further to **Dol-po**, he stayed some days in a 'sacred site' (*gnas*), which he describes in the following words:

> I went to "Hundred-and-some springs" the renowned holy spot revered by both Hindus and Buddhists, which is called Mu-mu-ni-se-ṭa or Mu-khun-kṣe-ṭa in the *Hevajra mulatantra*, and is called Mu-ṭa-ṣata in border dialects. It is a place where a natural fire burns on rock and water, and where dakinis mass together like clouds.[1]

In the following I shall take a brief look at this locale against the background of several individual biographical sketches and related genres, such as have been preserved in Tibetan texts of the 16th to 19th centuries; this will be supplemented by the presentation of corresponding texts from the genre 'descriptions of sacred sites' (*gnas yig*) and 'inventories' (*dkar chag*). These observations may perhaps enhance somewhat our understanding of the conception of religious space in northern Nepal and that of the history of the pilgrimage site Muktināth.

I. Muktinath and the Buddhist Tantras

In the travel report of Kah-thog Rig-'dzin Tshe-dbang nor-bu, reference is made, in clarification of the names *Mu-mu-ni-se-ṭa* and *Mu-khun-kṣe-ṭa*, to the *Hevajratantra*; we must therefore deal briefly with the Indian *pitha* tradition, such as it is preserved in the Buddhist tantras.

Since the works of Tucci, one has become familiar with the notion that the schemata of 24, 32 (as in the case of the *Hevajratantra*) or 36 sites for tantric practice (Skt. *pīṭha* / Tib. *gnas*) may refer both to the yogin's body and to geographically real places. These sites were the destination of small, exclusive groups of yogins and

yoginīs who followed the spiritual practice of certain cycles of tantra. Recent research has addressed with greater interest the question of how these schemata of the *Vajrakāya* became transplanted from the Indian context to the Himalayan regions and how this transposition entailed the formation of pilgrimage centres in the Tibet of the 12th and 13th centuries.[2]

This process, however, was critically reflected upon by members of the Tibetan priesthood, and Sa-skya Paṇḍita Kun-dga' rgyal-mtshan (1182-1251), for example, offers convincing testimony in his works that he was fully aware of the the true location of certain pilgrimage centres in the Indian subcontinent; his polemics gave rise to a plethora of writings concerning questions of religious geography, particularly among the bKa'-brgyud-pa school.

It is thus not surprising that the location of the **Munmuni** of the *Hevajratantra* was also debated, it being one of the four 'fields' (Skt.: *kṣetra* / Tib.: *zhing*).[3] Interestingly, the discussion of the question at the beginning of the 16th century was carried out by members of the royal court of Mustang, where at the time the school of the Sa-skya-pas had gained a foothold. Of pertinence was the position taken by Glo-bo mkhan-chen bSod-nams lhun-grub (1456-1532), as conveyed in writing to his nephew, "Prince" Mgon-po rgyal-mtshan. Having drawn on various sources, Glo-bo mkhan-chen comes to the conclusion that **Munmuni** is located in the southeastern part of India.[4]

Before summoning up a further teacher from Mustang of the 16th century, I should like to mention briefly that the designation **Mu-khun kṣeṭa**, ascribed by Kaḥ-thog Rig-'dzin Tshe-dbang nor-bu to the *Hevajratantra*, is not found in it. As has been remarked by David Jackson, the toponym **Mu-khun** can be located in the "Gung-thang Chronicle" (likewise compiled by Kaḥ-thog Rig-'dzin Tshe-dbang nor-bu on the basis of an analysis of old sources); there it refers to the place where one of the 13 'ruler fortresses' (*btsan-rdzong*) of the Gung-thang king Khri-rgyal 'Bum-lde mgon (1253-1280) was erected in the 13th century. I may add the observation of Charles Ramble that, for the *se-skad* speakers in northern Baragaun, **Mukha** refers to **Dzar-rdzong** in the valley Muktināth.[5]

II. Indian and Tibetan Yogins in Muktināth

Two hundred years before Kaḥ-thog Rig-'dzin Tshe-dbang nor-bu, a young Tibetan priest visited the holy site of Muktināth and remained there for more than three years. The description of this sojourn, which began in 1528, as documented in the autobiography of Jo-nang Kun-dga' grol-mchog (1507-1566), provides first of all insight into the early period of Mustang as a region dominated by Buddhism (the formal conversion of this part of Nepal to Buddhism may be dated to the 15th century), and secondly, shows Muktināth to be a place of pilgrimage for Nepalese and Indian kings.

Jo-nang Kun-dga' grol-mchog,[6] interestingly, begins his description with exactly the same formula from the *Hevajratantra* that we discussed in connection with Kaḥ-thog Rig-'dzin Tshe-dbang nor-bu; in my opinion, the source for the later citation by the teacher from Kaḥ-thog lies in the autobiography of Kun-dga' grol-mchog. The latter, in contrast to the former, quotes the passage from the *Hevajratantra* true to the original, adding to it only the paraphrase *sgrol-ba'i zhing* (= Muktikṣetra); in the dialect of Indian

Prakrit that was common among the yogins of his period, **Muktikṣetra** is pronounced as **Mukutakṣetra**. The sacred site itself is characterized as '108 tree trunks together with 108 spouts' (*shing sdong brgya rtsa brgyad / chu mig brgya rtsa brgyad dang bcas pa*).[7]

The following citation provides an idea of the extent to which pilgrimages were made to this place and which groups were involved:

> They came together like a gathering of birds striking [the ground] on that ford where the yearly washing-ceremony of the Indian king, his queen, his sons, ministers etc. [took place]. And after they had thronged together for the great delivery of alms, I came to the resting place where countless yogins of various [spiritual] lineages had assembled.
> As in this year [also] King De-bum rā-dza had arrived in full splendour together with his retinue, very many groups of yogins had shown up. It was during this occasion that I met up with them. I was able to understand the majority of what the yogins said."[8]

There follow examples of various Buddhist terms and concepts that Kun-dga' grol-mchog used in common with the Indian yogins. Of note is the listing of the individual groups of yogins, which are subdivided somewhat in the manner of the 18 groups of Śrāvakas in Buddhism. Kun-dga' grol-mchog mentions the intervals of 1½ and 1 year and 8-9 months that he spent in the company of the Indian yogins, receiving numerous teachings (*man-ngag*). He celebrated in their midst a *gaṇacakrapūja* and later received the name Mahātapasitraguru; the remark is made that he had the body of a Tibetan but the mind of an Indian (*kyod lus bod sems rgya gar ba*). On the basis of comparative material, we may identify the Indian ascetics among whom Kun-dga' grol-mchog principally studied as Naṭeśvarī yogins.[9]

During the same time, then, when the authenticity of spiritual toponyms from the tantras was being judged at the court of Mustang from theoretical and polemical points of view, a young priest who came from the social environs of the court was practising tantric teachings in Muktināth, the place sacred to Indian yogins, and the identification of this place as one of the four *kṣetra* of the *Hevajratantra* had already been made. What we may observe here is the process by which the site of 108 spouts, previously frequented primarily by Nepalese and Indian pilgrims, was so to speak "canonized" in Mustang of the 16th century by an important representative of Tibetan religiosity.

If we turn now to a Tibetan yogin of the 17th century who was born in the vicinity of Muktināth and enjoyed a great reputation as a yogin of the 'Brug-pa bka'-brgyud-pa school, we can see how the geography of the shrine was tied into a second tantric system, thereby undergoing a high degree of idealization or spiritualization. In the palace of Rab-rgyal rtse-mo we have the old fortress of **Dzong**, the birthplace of bsTan-'dzin ras-pa (1644/46-1723):

> On a pile of jewels, the mountain before me, the palace Rab-rgyal rtse-mo.
> Having arranged the precious stones of many lands (around it),
> in the manner of Mt. Sumeru and the four continents:
> [to the sacred site] I present this offering of a country [that is like] a maṇḍala.
>
> Where *gtse-shing* (?) and also all [kinds of] herbs grow; where the melodious sound of diverse bird calls rings out,
> The place where all gods and all humans make

offerings, [that is,] in the palace of Vajravārāhī:
It was prophesied under the name Mu-ku by the Jina, [and] the siddha Dza-vi opened the gate of the sacred site;
[This place] is one of the 32 *mahāpiṭhas*.
There offerings are made by all the *dharmarajas* from India; the stream of yogin pilgrims is uninterrupted.
[This place] is the fire hole of the Brahmins; uninterrupted are the offerings of substances to be burned.

[The place] whose glory encompasses the whole world - with folded hands I bring it this brief "praise of the sacred site."[10]

III. The Noble Families of Dzong and Dzar

From the work of Dieter Schuh we already know that the noble family of sKyar-kya gang-pa constructed the fortresses of **Dzong**, **Dzar** and **Kag** in the 15th cent., the representatives of this family are also designated in the sources as *khri-thog-pa*.[11] Up to now it has primarily been the biography of bsTan-'dzin ras-pa that one has turned to for the history of this family; it is clear from it that Khro-bo skyabs-pa was the builder of the fortresses and the first 'lord of the fortress' (*rdzong dpon*) of Rab-rgyal rtse-mo.

The biography of bsTan-'dzin ras-pa, however, offers only little information on the successors of Khro-bo skyabs-pa, and the description of the events in the 17th century is moulded by personal experiences during the conflicts between Mustang and the rulers of the Muktināth valley (*rgyal blon 'khrugs pa*). As these conflicts led to the intervention of the rulers of Jumla, the relation between Jumla and Mustang and the history of the lords of Dzong and Dzar have primarily been described against the background of these conflicts.[12]

In the following I shall briefly present two further biographies of the 17th century that may shed some light on the second half of that century and the ruling families of the fortresses beneath the shrine of Muktināth; after the school of the Sa-skya-pa/Jo-nang-pa and that of the bKa'-brgyud-pa, they are texts from the school of the rNying-ma-pa. These biographies came into my hands only recently, and I hope to be able to analyse them more closely at some later time. The first biography is that of O-rgyan dpal-bzang (1617-1677), and the second text deals with the life of Kun-bzang klong-yangs (1644-1696), the main disciple and 'successor' (*rgyal tshab*) of O-rgyan dpal-bzang.

O-rgyan dpal-bzang is a disciple of gTer-ston bDud-'dul rdo-rje (1615-1672) and has been known up to now principally as the founder of the monastery of **sKu-tshab gter-lnga** southwest of Jomosom.[13] The founding of a monastery community in the vicinity of Muktināth only a few years before his death shows us the local rulers, the fortress lords, in the role of 'donor' (*yon bdag*) typical of the Buddhist society of Tibet, whereas O-rgyan dpal-bzang himself fulfilled the function of a 'priest' (*mchod gnas*). The following citation is pertinent:

After having delivered an invitation, the dPon-drung khri-pa Tshe-gnas rgyal-po from the fortress Rab-rgyal rtse[-mo] requested [the performance of] a consecration for long life; he then donated as gift for the consecration thirteen [presents] of good quality, such as 18 Rupees [etc.] His younger brother, the officer

> bDe-skyid bsam-grub, donated a horse and a total of 20 silver ignots.
> And in order that the [Buddhist] teaching might spread on the Hill of Clear Light, [the master] cut the hair of each of the daughters of the dPon-drung Khro-bo Tshe-dbang and the dPon-drung bDe-skyid bsam-grub with the words <illegible>; later in Chu-mig brgya-rtsa it happened that Ngag-dbang bu-khrid, the wife of the khri-pa, donated the sum of 100 Rupees.[14]

Let us keep in mind, then, first of all that, at the time of the founding of the monastery of **sKu-tshab gter-lnga** by O-rgyan dpal-bzang, the fortress of Dzong was in the hands of a certain Tshe-gnas rgyal-po, who had a younger brother called bDe-skyid bsam-grub. Of further note is the fact that the sacred site of Muktināth was the place where the ruling family of Dzar and Dzong assembled with the priests of the rNying-ma-pa school. This link was by no means severed, however, at the death of O-rgya dpal-bzang in 1677; Kun-bzang klong-yangs, the successor of O-rgyan dpal-bzang, was likewise in Muktināth one year later, fulfilling the same functions as his teacher:

> The dPon-drung khri-pa Tshe-gnas rgyal-po went with me together to **Chu-mig brgya-rtsa**; with the aid [of the sādhana] of the wrathful deity, I offered the sprinkling of the water, the skull plate and the ritual noose to the retinue of those in charge etc. To their sons I granted the consecration of long life etc., and to the dPon-drung eight tola of *khro-chen* [a kind of copper?] etc. in order to reinforce the consolation [upon the death of their teacher].[15]

A short time later Kun-bzang klong-yangs travelled to Central Tibet where, among others, he met gTer-bdag gling-pa (1646-1714) in sMin-grol gling and Rig-'dzin Padma 'phrin-las (1640-1718) in rDo-rje brag; this journey was financed in part by Tshe-gnas rgyal-po, and also by the latter's younger brother bDe-skyid bsam-grub. Whereas the donations of the elder brother came from **rDzong Rab-rgyal rtse**, the seat of bDe-skyid bsam-grub is given as **rDzar**.

Having returned from Central Tibet, Kun-bzang klong-yangs in 1680 again met up with the 'officer brothers' (*dpon drung sku mched*), and the next thing we learn is that dPon-drung Tshe-gnas rgyal-po left this world. His death is immediately followed by the enthronement of the younger brother, and this can only be interpreted, in my opinion, as meaning that bDe-skyid bsam-grub became his brother's successor as the ruler of **Dzong**.

Before entering further into these particulars, we may briefly refer to events in Muktināth that followed in the wake of the death of Tshe-gnas rgyal-po (another member of the ruling family, a certain Ong bKra-shis rtse-mo, died around the same time):

> The next day in **Chu-mig brgya-rtsa**, without any idea of how to determine the cardinal directions etc., I [i.e. Kun-bzang klong-yangs], having brought the piles of the maṇḍala as gifts to the three sources of the Ye-shes me-lha, produced clay imprints from earth, on a spot where many brightly white reliquaries could be found that had collapsed by themselves.... Afterwards maṇi [walls] were constructed in combination with stūpas by this same officer [i.e. dPon-drung bDe-skyid bsam-grub], and the extremely fine mani [walls] that [still] exist in **Chu-mig brgya-rtsa** are the very same ones.[16]

For the succeeding years, the autobiography of

Kun-bzang klong-yangs mentions the ruler bDe-skyid bsam-grub (also referred to with the title *dharmaraja* (*chos rgyal*)) as the ruler of Dzar, Dzong and Kag (*rdzar rdzong skag*); he also bore the main costs for the extension of the monastery buildings in **sKu-tshab gter lnga**, which commenced in 1684. The situation changed only in the year 1687, for it was then that Kun-bzang klong-yangs received a further invitation from bDe-skyid bsam-grub, sent from Dzar, whereas an invitation to visit Dzong was communicated by dPon-drung Khro-bo dar-po and his wife.[17]

From these superficial observations I draw the conclusion, within the framework of this article, that in the seventh to ninth decades of the 17th century the fortresses of the Muktināth valley were dominated by the ruling family of Dzar.[18]

This ascendance coincided with the construction of the monastery complex of **sKu-tshab gter-lnga** and the officiating of rNying-ma-pa teachers as priests of the ruling families. The sacred site of Muktināth thereby takes on an added dimension: it is the place where rituals were performed for the officers and members of these families, and in whose physical surroundings the donors left behind signs of their generosity.

IV. The Idealized Landscape of Muktināth

One hundred years later the family of Dzar was still active in the spread of rNying-ma-pa teachings. We know, for instance, on the basis of the just mentioned catalogue, that they financed at this time the copying of a biography of Padmasambhava familiar under the title *sKyes rabs mam thar ga'u bdun ma*. The catalogue also contains an encomium, rich in detail, of the sacred site of Muktināth, concerning which I should here merely like to highlight the mention in it of the Maṇḍala of 62 Deities of the Mother Tantra (*ma rgyud re gnyis lha'i dkyil 'khor*); this formulation reconfirms the previous observation that Muktināth was imported into the system of the *Cakrasaṃvaratantra*.

It being stated in conclusion that the sacred site is a 'unique jewel adorning the world' (*gnas 'di 'dzam gling mdzes pa'i rgyan gcig yin*), a subdivision of geographical space is undertaken, leading to the question of how Muktināth and its wider surroundings are represented in the pilgrimage guides for Tibetan Buddhists. The subdivision begins with the upper part (*phu*) of the Muktināth valley, which is described as a mountain paradise where flowers glisten in the pastures: a 'place of meditative trance' (*bsam gtan gnas*). There then follows a description of the lower lying region of the valley:

> In the lower part: the Secret Cave of the Guru, Dhaulagiri [and] the self-arisen stone statue of sNa-ri Jo-bo; as well as the five treasures representing the body [i.e. the teaching] of rGyal-dbang Padma[sambhava], etc.: whether having arisen [by themselves] or been constructed [by men], innumerable supports [of body, speech and mind], these three, are found [there].[19]

With the Dhaulagiri Himal (*mu-le / mu-li gangs* or *gangs-chen*) and the Padmasambhava Cave on its northeastern flank (west of Larjung), we have reached the southern periphery of the region visited by Tibetan pilgrims and described in the corresponding handbooks. The standard compilation of pilgrimage guides for southern Mustang, already published several times, begins with a text devoted to Muktināth and ends with a description of Dhaulagiri, the Secret Cave and

the Avalokiteśvara statue of sNa-ri.[20]

Before I go into the description of Muktināth offered by the genre of pilgrimage guides, a brief look should be taken at the compilation of the text as a whole - this in order to establish criteria for dating the collection. The main part of the text is devoted to the Dhaulagiri Himal, that is, to an enumeration of the spiritual qualitites of the snow-covered mountain; particular significance falls to it by reason of the cave in which Padmasambhava is said to have stayed. This part of the collections bears the title "Description of the Two Sacred Sites 'Great Glacier' and 'Secret Cave'" (*gangs chen gsang phug gnis kyi gnas yig*).

As is learned from the introduction to this section, the description of the two sites is based on a prophecy of a Dakiṇī (*gnas bshad lung bstan*); these prophecies were channelled through a certain sNgags-'chang Tshe-ring, who was staying in the Padmasambhava Cave in a male iron-monkey year (*lcags pho spres lo*). These descriptions are followed by a further dream, in which the local mountain deity (*lha btsan gzhi bdag*) manifests itself, again, apparently, to sNgags-'chang Tshe-ring. The next item mentioned is the self-arisen Avalokiteśvara statue, the Lord of sNa-ri (*sna ri jo bo*); this statue was unearthed from the mountain and cave (*gangs chen dang gu ru gsang phug gnyis nas gdan drangs pa*). The list of pilgrimage sites of the Dhaulagiri Himal is rounded out with this status, it being stated that "in these three, the Great Glacier, the Secret Cave and the Lord [of sNa-ri], all pilgrimage sites of the world were complete."[21]

The site of **sKu-tshab gter-lnga** is mentioned only briefly in the collection of pilgrimage guides. Even though it is a fine shrine of Padmasambhava, the same significance is not attached to it as to the Dhaulagiri Himal and the Secret Cave; this may be taken as an indication that at the time when Dhaulagiri was spiritualized, so to speak, as the goal of Tibetan pilgrims heading south, the fame of the site of Padmasambhava's practices southwest of Jomosom had already paled. This is reflected in the toponyms which are listed under **sKu-tshab gter-lnga** in the third section of the text:

> The place reached by a one-day walk south of the sacred site of **Chu-mig brgya-rtsa** was called in former times Hill of Clear Light and nowadays is also called **'Grum-pa lha-khang**. There clearly visible imprints of the foot and knee together with the hands of the Guru [Padmasambhava] are found.[22]

The second part of the text collection describes a place that likewise lies one day from Muktināth, but in a northern direction. This site, too, was trod upon by the feet of Padmasambhava and furthermore is associated with the 84 mahā-siddhas. This destination for pilgrims is once again a cave, and in my opinion the place acquired its name from a certain kind of white rock, i.e. limestone:

> As for the meaning of 'gCong-gzhi', it is a sacred site on which Ācārya Padma-[sambhava] set foot and likewise was blessed by the 80 mahāsiddhas. In the pure vision of bKa'-brgyud Bla-ma Rin-po-che Mi-pham yongs-'dus and sGrub-pa chen-po sTag rTse-ba, that which [once] came forth as protuberances of *gcong-gzhi* [stone] was perceived as [being the deity] Bde-mchog lhan-skyes in union.[23]

I base my argument that the name **gCong-gzhi** refers to a limestone or calcite concretion primarily on the Tibetan medical tradition, according to which there are several kinds, which are variously able to alleviate disorder of air, bile,

phlegm and their combinations. Snellgrove's translation, "self produced place of promenade" (*gcong gzhi rang byung*) does not occur in the description of the site of **gCong-gzhi** for Tibetan pilgrims but is taken from passage describing the Dhaulagiri Himal.[24] What else can we glean from this citation.

Although the wording of the passage is not unambiguous and I have up to now not succeeded in identifying a bKa'-brgyud (= bKa'-brgyad?) Bla-ma named Mi-pham yongs-'dus, I should like to mention the person known under the name sTag rtse-ba. The latter is sTag-rtse sku-skye-ba Mi-pham phun-tshogs shes-rab, a teacher of the 'Brug-pa school active at the court of the Mustang king Bsam-grub dpal-'bar (fl. ca. 1675); he furthermore wrote a biography, available to me, of the Second sDing-po-che Cog-gra Mi-pham Ngag-dbang snyan-grags dpal-bzang (1617-80).[25]

In summary, it may be stated that the dates of persons associated with the founding of monasteries or retreat sites in southern and northern Mustang may be determined first and foremost for the 17th century (the founding of **sKu-tshab gter-lnga**: 1668). In the succeeding period, following the establishment of these sites by priests of the rNying-ma-pa school, such as O-rgyan dpal-bzang, or ones of the bKa'-brgyud-pa school, such as sTag-rtse sku-skye-ba, an expanding idealization and spiritualization of the landscape occurred, which in the end took in the territory of the Dhaulagiri Himal C and northern Mustang). Under these circumstances, I would venture to place the date of the vision of the above-mentioned sNgags-'chang Tshe-ring (*lcags pho spres lo*) in the year 1740.[26] A. W. Macdonald has described this expansion in the following words: "Here we see the southward thrust of frontier Bon-pos and Lamas..., and the transformation of local mountain, earth and water spirits into keepers of the Buddhist law."[27]

The first part of pilgrimage guides whose compilation we can now date to the 18th century describes in detail the old shrine of Muktināth and the merit that accrues to the pilgrim in making offerings at the site. I shall not go into these descriptions in detail but merely sketch briefly the structural composition of the text: Following a set praise for Padmasambhava (missing in the edition of Snellgrove), the visit of this master is placed in the first world period (*skal pa dang po*), as distinguished from the visit of the 84 mahāsiddhas (*skal pa bar ma*); the feats of the latter are marked by sacral acts involving water: First they block the outflow of a poisonous lake in **La-stod rGyal-gyi Śrī** (this place name is missing in the edition of Macdonald), and later undertake a pilgrimage to **Gangs Ti-se** and **mTsho Ma-pham**; following a ritual bathing in the latter lake, they take 108 buckets of water from it and settle down in Muktināth (Snellgrove translates "eighty-four ladle-fulls of water," the text reading *chu ku ba brgya dang brgyad*; no figures given in the edition of Macdonald).

There follows an idealized description of the site. Interestingly, it begins with the identification of it as the maṇḍala of Cakrasaṃvara. Of the places listed next, one may single out, along with the 108 spouts, the serpent deity dGa'-bo 'Jogs-pa and the fire burning atop the water source (*chu mig me 'bar*). Before extolling the merits that come from making offerings at the site[28] and listing the sources of the mentioned accounts, the text deals with the nearby surroundings of Muktināth. Here the name of the valley of **sTed** in the northeast occurs, which also was frequented by Padmasam-bhava, and where an inexhaustible salt mine is said to be located.

I should like to close this compilation of Tibetan

sources on Muktināth with a song (*mgur*) of Kaḥ-thog Rig-'dzin Tshe-dbang nor-bu; it was composed in 1727, when the teacher from East Tibet first visited the pilgrimage site. The starting point of his journey was Mang-yul and the sacred sites there:

E ma ho!
Wonderful sacred site, on the border of Nepal and Tibet,
the white glacier mount, like a hoisted victory banner.
He called it Land of the Great God of Existence (i.e. Śiva).
He who is the Lord, the Kalyānamitra O-rgyan chen-po!

On the front-side, the rocky mount (with) the vajra peaks,
Hundred-and-some spouts of Ambrosial water it is called.
Supreme practice site, where shines forth the wonderful light -
that which is the place for the profound treasures' numerous teachings.[29]

Notes

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1. Jackson (1978) p. 212 and id. (1984) pp. 7-8 & 11-12 (note 11). The source of this quotation is *RNAM-THAR V*, pp. 144.6-145.2. Before the two visits to Muktināth, Kaḥ-thog Rig-'dzin Tshe-dbang nor-bu stayed with 'high-ranking officers' (*dpon drung che gras*) who went by the title of *khri-thog-pa* ('enthroned ruler'); see ibid. p. 146. The seat of this family is the fortress of Dzar (*dzar rdzong*); see also note 14.

2. Macdonald (1990) and Huber (forthcoming). These two works provide information particularly on **La-phyi**, **Tsā-ri** and **Ti-se**, the three most important spiritual practice sites in the *Cakrasaṃvaratantra* tradition. Concerning **Tsā-ri** and the connection between psycho-physiological processes in the body of a yogin and the treading of a geographical locality, see Stein (1988) pp. 37-43.

3. Snellgrove (1959), vol. I, p. 68: "These are the different kinds of places of pilgrimage, some of which are known as 'seats' (*pīṭha*), some as 'fields' (*kṣetra*), some as 'meeting-places' (*melāpaka*) and some as 'cemeteries' (*śmaśāna*)." And p. 70: "The *kṣetras* are Munmuni, Kāruṇyapāṭaka, Devīkoṭa, and Karmārapāṭaka."

4. *DRIS-LAN*, p. 18.2-4; Jackson (1978) pp. 212-213 has already referred to this passage. Cf. also Jackson (1984) p. 125: "The name Mgon-po rgyal-mtshan is prominent among the names of those to whom Glo-bo mkhan-chen wrote letters and instructions." These writings contain further material on the geographical location of places denoted by spiritual toponyms.

5. Jackson (1978) pp. 212-213 and Ramble (1987) p. 21 (cf. Ramble (1984) p. 161 concerning the state of the ruins); for the Tibetan text of the "Gung-thang Chronicle" see *GDUNG-RABS*, p. 108: *ta mang se mon kha gnon du / glo smad mu khun srin rdzong brtsigs*. Macdonald (1989) p. 170 notes the difficulties in identifying the group of the Se-mon Tamang and calls this citation "the

oldest historical mention of Tamang in Nepal." Cf. also Vinding (1988) p. 172: "The Tamang se mon is probably a reference to the Tamang Thakalis."

6. Jackson (1984) p. 60 calls him "a noble monk from Lo Monthang who went on to become one of the foremost Buddhist masters of 16th century Tibet"; see also ibid. p. 71: "Kun-dga' grol-mchog eventually became the head of Jo-nang monastery; the famous Tāranātha is considered to have been his immediage rebirth." He is the author of a biography of Glo-bo mkhan-chen bsod-nams lhun-grub that I have not been able to obtain (ibid. p. 175 and passim). Descendants of Kun-dga' grol-mchog were still living in the 17th century in sNye-shangs; cf. *RNAM-THAR* II, fol. 52a.

7. *RNAM-THAR* I, p. 386.1-2; concerning the alternative name of Muktināth, i.e. **Muktikṣetra** ('salvation field'), see Messerschmidt (1989) p. 90. There may likewise be found there a description of the spot with the 108 spouts and an explanation of the meaning of the water for Hindu pilgrims; ibid. p. 97. The mention of the tree trunks possibly suggests that in the 16th century flow-off water from the springs was conducted through hollowed out trunks.

8. RNAM-THAR I, p. 386.3-6: ... *rgya gar gyi rgyal po / btsun mo / sras blon po sogs lo dus la khrus kyi 'jug ngogs der bya dus* (= 'dus) *btab pa ltar 'tshog* (= tshogs) *cing / sbyin gtong rgya chen po la bsmyegs nas / ... / rigs tha dad pa'i mal 'byor pa dpag tu med pa 'du ba'i bsti gnas ga la ba der phyin pas / de lo de bum rā dza 'khor bcas gzabs sprod byas byon pa la bsten* (= brten) */ dzo ki tshogs shin tu mang ba 'dus 'dug pa'i skabs de dang 'dzom / kho bos dzo ki'i skad phal cher go...* King De-bum rā-dza can be identified as Dibum or Dimma, one of the Mallakings of Parbat (the alternative name of Parbat being Malebum). On this king, the third ruler of Parbat who expanded the domains of the kingdom in 1488 see Shrestha (1984/85) p. 6; Pandey (1971-1972) presents a critique of early western references to king "Dimba". Concerning the four-day journey from Beni, the old capital of Parbat, to Muktināth and the first descriptions of the pilgrimage site from western sources see Kirkpatrick (1811) p. 287 and Hamilton (1816) pp. 272-273.

9. RNAM-THAR I, pp. 387.2-390.6. Cf. the list of yogins (ibid. p. 387.2-3) with that in RNAM-THAR III, p. 535.5-6. The latter passage was dealt with by Tucci (1931) pp. 686-687. There he writes of "Nāthapanthins, though of a specific Buddhist branch." In the same text, the group of Naṭeśvarī yogins is mentioned along with their exponent Tīrthanātha; Kun-dga' grol-mchog studied under disciples of this Tīrthanātha in Muktināth.

10. ZHAL-GDAMS, fol. 50b/4-6: *mdun ri rin chen spungs pa'i steng / pho brang rab rgyal rtse mo la / yul phran mang po'i khra* (= phra) *bkod nas / ri rab gling bzhi'i tshul du ni / mandal yul gyi mchod pa 'bul / gtse shing sman sna kun kyang skye / bya skad sna tshogs skad snyan sgrog / lha mi kun gyis mchod pa'i gnas / rdo rje phag mo'i pho brang du / rgyal ba'i lung bstan mu ku zhes / grub thob dza vis gnas sgo phye / gsum cu so gnyis gnas chen yin / rgya gar rgyal kun gyi* (= gyis) *mchod / dzo ki'i gan* (= gnas) *bskor rgyun mi chad / bram ze rnams kyis* (= kyi) *hūṃ* (= hom) *khung yin / bsreg rdzas mchod pa rgyun mi 'chad* (= chad) */ grags pas 'dzam gling kun la khyab / thal sbyar gnas bstod bsdus tsam 'bul.* This designation of Muktināth as a palace of Vajravārāhī suggests that bsTan-'dzin ras-pa localized the site within the system of the *Cakrasaṃvaratantra*; this is expected, given that he himself spent many years at the most

important spots associated with this tantric cycle: in **Tsari**, at **Kailasa** and in **La-phyi**. Contradicting this is the mention of the list of 32 *pīṭha*, which comes from the *Hevajratantra*. Concerning the concept of 'gate of a sacred site' (*gnas-sgo*) and its being opened by a "héro fondateur," see Stein (1987) p. 189. Might the siddha Dza-vi be Grub-chen Dzā-ha-bhi, whose teachings reached 'Bri-gung Rin-chen phun-tshogs (1509-1557) by way of Vajranātha?

11. Schuh (1990) p. 6 and Schuh (1992) p. 102; cf. also ibid., p. 37: "at a later point in time the *dpon-po* of **Dzong** resettled in **Dzar**." Concerning *khro-bo skyabs-pa*, see ibid., p. 108. Ramble (1984) pp. 106-107 provides a brief survey of the settlement of the Muktināth valley by the noble family and the sequence of fortress constructions: Kag → Dzong → Dzar; concerning the name of the fortress of Dzar he writes: "The name is said to signify the superiority of its location over that of Dzong..." Cf. Ramble (1987) p. 226.

12. See Jackson (1978) pp. 220-221 and the synopsis in Ramble/Vinding (1987) p. 9 and Vinding (1988) p. 173 (same wording); for a more detailed view of the political dependency between Mustang and Jumla in the 17th and 18th centuries, cf. Schuh (1992) pp. 59-78. For the description of bsTan-'dzin ras-pa, see RNAM-THAR IV, fols. 1a-3b and ZHAL-GDAMS, fols. 46a-47a.

13. For a desciption of **sKu-tshab gter-lnga**, see Snellgrove (1961) = (1989) pp. 186-187 and id. (1979) pp. 79-81 and passim. For the text and translation of *Sku tshab gter lngu dkar chag*, see ibid. pp. 84-101 and 133-143; the text was filmed by the NGMPP: reel no. L 257/24 (26 fols.). Snellgrove dates the founding of the monastery to the middle of the 17th century; the biography of O-rgyan dpal-bzang (fol. 317a) mentions the year 1668 (*sa pho spre lo*) as the date for the construction of the 'monastery site' (*dgon gnas*), by name Hill of Clear Light (*'od gsal sgang*). The place is also called 'the site of the Guru's (i.e. Padmasambhava's) practices' (*gu ru'i sgrub gnas 'od gsal sgang*): ibid. fol. 323a.

14. RNAM-THAR VII, fol. 323b/3-6: *rdzong rab rgyal rtse nas dpon drung khri pa tshe gnas rgyal po'i* (= pos) *spyan 'dren zhus nas tshe dbang zhus pas dbang yon du a* (= a las) *bco brgyad kyi mtshan pa bcu gsum mtshan bzang po zhig phul cing / khong gi cung po* (= gcung po) *dpon drung bde skyid bsam grub kyis rta gcig dngul nyi shu'i gtam brangs* (= rnam grangs) *phu* (= phul) *zhing 'od gsal gang* (= sgang) *der bstan pa rgyas phyir bra ba* (= grva pa)... *zer dpon drung khro bo tshe dbang dang dpon drung bde skyid bsam grub gnyis pa'i sras mo re re skra cad* (= bcad) / *slar chu mig brgya rtsar khri pa'i btsun mo ngag dbang bu khrid kyis a las brgya drang* (= grangs) *zhig phu* (= phul) *'byung ngo*. The custom of having the daughters of the princely family ordained by a teacher of the rNying-ma-pa school was kept up for over another 50 years, as the biography of Kaḥ-thog Rig-'dzin Tshe-dbang nor-bu documents: "They [the higher officers; see fn. 1] asked for a link with the teaching that they paid respect to, and inasmuch as each of the daughters of the individual [officers] had faith and entered into the gate of the teaching etc., there arose a great number of novitiates of the [Buddhist] teaching"; RNAM-THAR V, p. 146.2-3: ... *dpon drung che gras rnams kyi* (= kyis) *zhabs gus chos 'brel zhus shing so so'i sras mo re yang chos sgor bcug pa sogs dad chos btsun gsar ma mang zhig byung*.

15. RNAM THAR II, fols. 32b/6-a/2: *dpon drung khri ba tshe gnas rgyal po dang nge* (= nged) *rang lhan du chu mig brgya rtsar phebs / sme rtsegs* (= brtsegs) *sgo nas khrus gsol dbu thod kha rtags* (=

btags) *do dam 'khor la sogs phul / sras mams la tshe dbang sogs dang dpon drung du khro chen dngul brgyad sogs thugs gsos* (= gso) *spangs* (= dpangs) *mthor phul.*

16. RNAM-THAR II, fols 45a5-b/1: *sang nyin phyogs rtsis sogs kyi mam rtog med par chu mig brgya rtsar ye shes me lha rtsa gsum gyi dkyil 'khor phung po yon du phul pas sku gdung shin tu dkar ba rang log mang du 'dug par sa tsha tsha btab*; and fol. 46a/1-2: *de phyin dpon drung de nyid gyi* (= gyis) *maṇi mchod rten spel mar bzhengs pas da lta'i chu mig brgya rtsar gyi maṇi shin tu mtshan che ba 'di yin no.*

17. RNAM-THAR II, fols. 53 b/6-54a/3. The family of dPon-drung Khro(-bo) dar(-po) also received teachings from bsTan-'dzin ras-pa; the latter conferred on them a consecration when he returned to the Muktināth valley, which probably occurred around this time. See ZHAL-GDAMS, fol. 51à/5-6: *de'i dus dpon drung khro dar yab yum khu dbon kyi khrom dbang gi dbang gzhi gting zhing sna len bzang po mdzad.*

18. See also DKAR-CHAG I, p. 9.1, where Tshe-gnas rgyal-po is listed under the lineage of the rulers of Dzar. His son is mentioned there under the name Ngag-dbang rnam-rgyal. In my opinion, this is the dPon-drung khri-sde Ngag-dbang rnam-rgyal listed by Kun-bzang klong-yangs; cf. RNAM-THAR II, fols. 83b/2-3 and 84b/1-6. Whereas the first passage tells of an invitation from Dzar, we find the prince shortly thereafter in **sKag rdzong rtse**, where he is placed on the throne by 'Dzum-lang rgyal-po Bir-ba-dhur. I hope to be able to return to this passage on a later occasion (the ceremony it refers to took place in Bārbung in 1695).

19. DKAR-CHAG I, p. 10.2-3: *mdo na gu ru'i gsang phug mu le gangs / rang byon rdo sku sna ri jo bo dang / rgyal dbang padma'i sku tshab gter lnga sogs / 'khrungs dang bzhengs sogs grangs med rten gsum bzhugs*. Between the upper and lower parts, in the middle (*bar*), lies Dzar and the 'six governed regions' (*rgyal khab drug*); these latter probably coincide only partially with the six villages of the Muktināth valley, as one of the territories is called *gnyan yod* (?).

20. See Snellgrove (1979) pp. 106-128 & 151-170 for the text and translation of the compilation, which can be subdivided into four sections. The collection was also edited by Macdonald (1979) pp. 246-253. The DKAR-CHAG II edition is incomplete (fols. 10-11 are missing). The first mention of this pilgrimage guide is found in Tucci (1956) pp. 10ff., where also the mountain name of Mu-le is connected with the region of the Bārbung Khola: "Mu luṅ (rMu luṅ), the valley of Mu, rMu." On the location of the cave complex, see Gebauer (1983), p. 76.

21. Snellgrove (1979) p. 168: *gangs chen gsang phug jo bo 'di gsum la / 'jam bu gling gi gnas kun 'di la tshangs* (Macdonald (1979) p. 253 reads *changs*). Concerning the white stone statue of Avalokiteśvara in Narshang, above Larjung, see Snellgrove (1961) = (1989) p. 181. Before the text in conclusion once more urges pilgrims, on the basis of cautionary examples, not to fail to visit these three sites before going on further to India, a text bearing the title *'Byung ba bzhi lha'i gnas yig* is interposed. The remark by Macdonald (1979) p. 244 about the prophecy concerning the land of **Thag** must be viewed in connection with these deities: *'o na shar phyogs thags zhes bya bar 'gro na 'byung ba bzhi'i lha mams 'dren bya dgos gsungs so.*

22. DKAR-CHAG II, pp. 67.6-68.2: *gnas chen chu mig brgya rtsa nas lho phyogs su nyin lam gcig phin pa ni / sngon kyis* (= kyi) *'dus* (= dus) *'od gsal*

gangs (= sgang) *zhes su grags / da lta 'grum pa lha khang yang zer / zhes pa gu ru'i zhabs rjes dang /zhabs pus kyis* (= kyi) *rjes / pyag gnyis ka'i rjes bcas gsal bar bzhugs shing*. Both names, **'Od gsal gangs** (= sgang) and **'Grum-pa lha-khang**, are also found in the text of Macdonald (1979) p. 248. In Snellgrove (1979) p. 158 (= p. 112), the distinction between two chronological phases is missing along with the name **'Grum-pa lha-khang**. The etymology of the latter toponym may be the name **sGrom-bu lha-khang**; see RNAM-THAR VIII, p. 437.2-3: 'When I arrived at the Temple of the [Stored] Chest, the seat of Kun-bzang klong-yangs, in order to encounter the five treasures that represent the body [i.e., the teaching of Padmasambhava]...' (*..kun bzang klong yangs kyi gdan sa sgrom bu lha khang la sku tshab gter lnga mjal du phyin dus*). This information, furnished by Padma dBang-'dus (*1697), dates to the decades of the 1730's or 1740's, i.e., to approximately the same time as the visits of Kaḥ-thog Rig-'dzin Tshe-dbang nor-bu to southern Mustang (cf. notes 1 and 29).

23. DKAR-CHAG II, pp. 66.6-67.2: *gcong gzhi zhes bya ba / slob dpon padmas kyang zhabs kyis bcags shing / grub chen brgyad bcus kyang byin gyis brlabs pa'i gnas chen / skabs brgyad* (= bka' bryud?) *bla ma rin po che mi pham yongs 'dus dang / grub thob chen po rtag rtse ba'i gzigs shang la / gcong bzhi* (= gzhi) *'bur du thon pa'i 'di nyid ni / bde mchog lhan skyes yab yum du gzigs shing*. The first description of this cave by a visitor from the West is in Tucci (1953) = (1977), p. 56, under the name Self-Arisen Stūpa (*rang byung mchod rten*): "The cavern owes its name to a big round natural pillar which stands in the middle of it, almost as if it supported the weight of the vault." In Tucci (1956) p. [11], interestingly, this cave is equated with the secret cave on the northeast flank of Dhaulagiri. Tucci's identification of one of the figures formed from stone as mNga'-ris Jo-ba, i.e. Atīśa, is thus not valid; it is rather the previously mentioned Avalokiteśvara statue sNa-ri Jo-bo.

24. See Snellgrove (1961) = (1989) p. 189 for a description of the cave and the expression *gcong-gzhi rang-byung*. Cf. also Snellgrove (1979) p. 117: "Like a wish granting gem is the Self-Produced Place of Promenade" (= p. 162: *yid bzhin nor bu gcong gzhi rang byon 'khrungs*), and fn. 40 concerning the problems this passage poses. If, on the contrary, one translates as 'here has appeared the self-arisen [formation of] *gcong-gzhi* [stone], the wish-granting gem', then the problems dissolve. For the different kinds of limestone (proper spelling *cong-zhi*) in Tibetan materia medica see Parfionovitch, Y. et al. (1992) pp.17, 61, 173, and 217.

25. Concerning King Bsam-grub dpal-'bar, see Jackson (1984) p. 150: "He revered the venerable Rtag-rtse-ba Mi-pham-shes-rab-phun-tshogs as his chief preceptor." A block print edition of his "Collected Works" was filmed in 1986 by the NGMPP (L 100/1 - L 100/27); the biography of the Second sDing-po-che Cog-gra is located in the National Archives/Kathmandu, 242 fols. (= AT 33/1).

26. As Snellgrove (1979) p. 113, fn. 37 has already remarked, several manuscripts read the name as *yon bdag mtshan can sngags 'chang tshe ring* (one of them being DKAR-CHAG II, p. 68.6: *bdag yon bdag gis* (= gi) *mtshan can...*). Might he not be a member of the princely family of Dzar, which figured in the 17th and 18th centuries as 'donors' (*yon bdag*) to the rNying-ma-pa school? Cf. also the passage cited in fn. 19 from DKAR-CHAG I, where the list of the sacred sites of the south commences with the Secret Cave.

27. Macdonald (1979) p. 245. The school of the

Bon-po cannot be treated within the framework of this article. On Muktināth (*chu mig brgya-rtsa*) in the works of Bon-po scholars of the 20th century, however, see LAM-YIG, p. 28 and BSTAN-'BYUNG, p. 494. Cf. also the map in Cech (1992) p. 392 (opp.): *Chu-mig brgyad* (sic) *cu rtsa gnyis*. Concerning the circumambulation of the sacred site by adherents of the Bon-po school during the Yartung festival, see Ramble (1984) pp. 157-158 = (1987) pp. 230-231.

28. For a description of the summer festival in Muktināth and and the ritual circumambulation of the sacred site by the Buddhist monks of Dzar and Purang that takes place on the occasion, see Ramble (1984) p. 157 = id. (1987) p. 230. On the collection of earth and water from Muktināth as sacred elements and their insertion into stūpas see also Mumford (1989), p. 97.

29. ZHAL-GDAMS I, pp. 25.6-26.1: *e ma ho / gnas ya la mtshan pa bal bod mtshams / ri gangs dkar rgyal mtshan 'phyar 'dra ba / khong srid pa'i lha chen gling du zhes / rje o rgyan chen po'i dge bsnyen lags / de mdun ngos brag ri rdo rje spo / chab bdud rtsi chu mig brgya rtsa zhes / sgrub gnas mchog ngo mtshar gzi byin 'bar / gter zab chos mang po'i bzhugs gnas lags*. In the colophon to the song (ibid. p. 28.3-4), Rig-'dzin Tshe-dbang nor-bu calls the place a 'border community of Mang-yul skyid-grong' (*mang yul skyid grong gi sde mthar thug pa bal bod mtshams chu mig brgya rtsa*). The connection with the region has been maintained up to the 20th century; see, e.g., the ornamental furnishings of dGon-pa gsar-ba in Muktināth; Jest (1981) p. 67: "Two chörten represent the Jowo of Kyirong." Snellgrove (1961) = (1989) p. 200 describes a nun who looked after the needs of pilgrims in Muktināth; she was a disciple of Brag-dkar Rin-po-che. The latter is the spiritual leader bsTan-'dzin Nor-bu (1899-1958) from Brag-dkar rta-so in Mang-yul Gung-thang.

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RNAM-THAR VIII – Padma dbang-'dus (born 1697): *mKha' mnyam 'gro ba'i rtsug (= gtsug) brgyan (= rgyan) pad ma dbang 'dus kyi rnam par thar pa gsal bar bkod pa la rmongs mun thib po sal (=sel) ba'i sgron me,* 176 fols. in *Autobiographies of Three Spiritual Masters of Kutang,* Thimphu: Kunsang Tobgay & Mani Dorji, 1979, pp. 145-495

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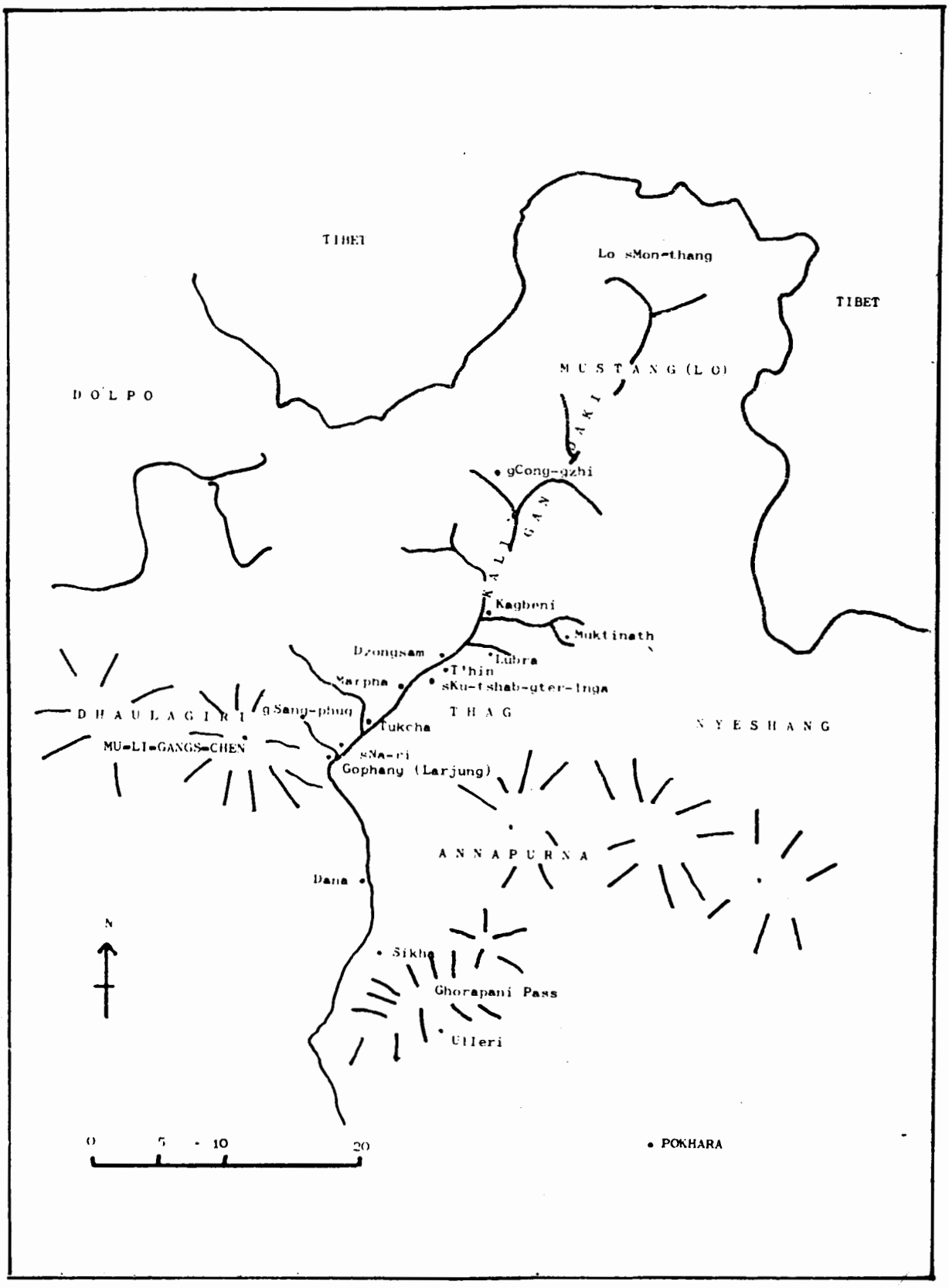
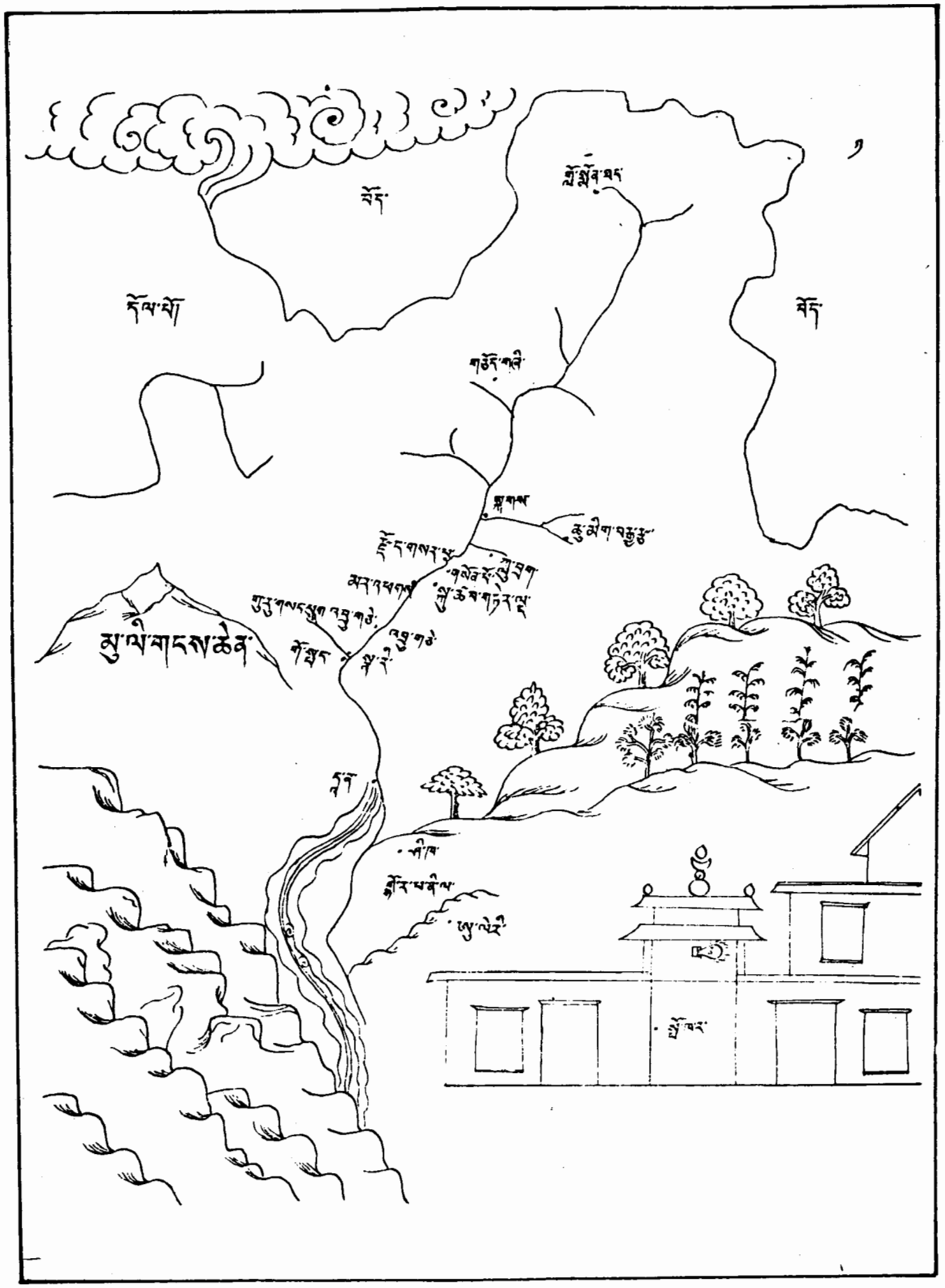


Maps taken from Snellgrove (1979)



(Drawn by mTshams-pa Ngag-dbang)

Settlement Processes and the Formation of States in the High Himalayas Characterized by Tibetan Culture and Tradition

Concept and First Results

Prof. Dr. - Willbald Haffner and Dr. Perdita Pohle
Geographer

Topic and aims

With the beginning of the year 1992, a new research programme has been started by the Nepalese Department of Archaeology and the German Research Council. The topic of this Nepal-German research programme deals with settlement processes and the formation of states in the High Himalayas, characterized by Tibetan culture and tradition, a programme conceived to last for a period of 5 years. At the upper limit of habitation the establishment and decay of settlements as well as the rise and fall of state entities will be studied as processes together with their effects on the structuring of space. This interdisciplinary project, with a primary base in the humanities and cultural studies, was initiated by Tibetologists and architectural historians, designed by representatives from the fields of settlement archaeology, historical settlement geography and ethnology, and methodologically rounded out by the disciplines in the natural and engineering sciences, e.g. dendrochronology and photogrammetry/cartography (Fig. 1). As far as the scope of inquiry and the thrust of research are concerned, the programme will concentrate on the territory of the whole High Himalayas, while the planned field work will concentrate on exemplary areas in the Mustang District of northern Nepal, well known for its old trade- and pilgrimage routes and in the high-mountain valley of the Indus in Ladakh (Fig. 2). Reasons both scientific and pragmatic in nature led to this decision: for all areas of scholarly study

concerned with Tibet and its culture, the High Himalayas are currently the most important region for conducting research. There, Tibetan culture continues to be kept alive, lived out in practice and further developed. A number of things favoured the choice of Mustang and Ladakh as the sites for field research - in particular, their settlement history, which dates back to prehistoric times, and, as preliminary work has shown, their unexpectedly great amount of historically exploitable sources, chiefly written sources but also ones bearing on archaeology and architectural and settlement history.

Preliminary studies in the High Himalayas thus bear witness to several thousand years of settlement and cultural history, during which large-scale population movement, cultural superimpositions and interpenetrations as well as conflict-laden interaction took place. The fundamental facts are unknown, beginning with the most elementary ones: the chronological specification of the various settlement phases. What the research programme envisages, however, is not so much documentation surveys being carried out by projects of interest to archaeology and settlement geography as rather resolving unanswered questions concerning the rise and fall of settlements and state structures, that is, the close connection between settlement processes and the formation of states.

The settlement processes and the formation of states in the High Himalayas, particularly in the highest elevations of the habitational zone, should not be viewed in isolation from the likewise constantly changing natural environment; the dependencies and reciprocal relations between man and the not seldom threatening aspects of nature in the high mountains are all too obvious. In a systematic approach, therefore, the concern will first be to analyze the numerous relations between the growth of settlements and the stages of social and economic development, and secondly to pursue the implications of the dependence of man on an environment that can truly be called extreme.

Methodologically, the project embraces a twofold approach. The intention on the one hand is for archaeologists, Tibetologists, historical settlement geographers and dendrochronologists, among others, to study the past by evaluating as broad a spectrum of sources as possible; secondly, starting from a perspective in the present, the development of the settlement area will be followed step by step back into the past (retrospective method) - an approach that is used primarily by settlement geographers, but also by architectural historians, architects and ethnologists. Furthermore, the attempts will be made to achieve the application of methods and working procedures of historical-genetic settlement research (settlement archaeology and geography, dendrochronology, architectural history), whose use has previously centered for the most part on Central Europe, to the High Himalayas, that is, to a cultural domain that has hitherto been neglected by historical research, it being at the same time a natural domain whose ecological conditions are extreme.

Beyond these somewhat more methodologically oriented aims, however, a further concern of the proposed research project is to maneuver established, highly specialized disciplines out of their isolation by selecting themes and research topics that can be dealt with only through an interdisciplinary approach. Thinking that reaches beyond the borders of single disciplines should be considered not as an overstepping of specialized competence but as a challenge to engage in interdisciplinary cooperation. Research carried on in isolation, as the preliminary studies have shown, very soon reach the limits of what is

possible in terms of method and content, and also in terms of the practical conduct of research. The energy expended on planning, organizing and carrying out research work under extreme conditions often cease to bear any relation to the results achieved.

The region under study

With its extreme elevations, its dry climate and its high-lying mountain valleys inhabited by Tibetan ethnic groups, the High Himalayas form a geographic unit that extends in the west as far as Ladakh and in the east as far as Bhutan (Fig. 2); its natural and cultural features set it off clearly from the surrounding regions.

Among the characteristics of this habitat are:

- its unique natural setting (extreme elevations, climatic aridity, sparse vegetational covering) and
- its unique location on the periphery, as seen from the governmental centers,
- its situation at the point of interaction between two high cultures (the Tibetan-Buddhistic in the north and the Nepalese/ Indic-Hindu in the south).

Thus, while the main crest of the Himalaya represents a sharp natural divide between the southern side of the range, moistened by monsoon rains, and the arid northern side, which is protected from the rains, it in no way forms a cultural divide. In the central Himalaya, ethnic groups of Tibetan origin and tradition also have settled in the high-mountain valleys on the south side of the range, particularly in transverse valleys and along mountain passes.

The following points pertaining to the ecology and culture were crucial for the decision to concentrate efforts spatially on the region of the High Himalayas:

Ecologically, the High Himalayas are a habitat of extreme living conditions for humans. The rough topography, the inhospitable features of the high-mountain climate, the threat posed by natural hazards (earthquakes, landslides, outburst of glacier-lakes) are ecologically limiting factors for the economy of the high-mountain dwellers. They limit the area available to human life pursuits to island-like valleys and basins. The ecologically favoured zones lie principally at the foot of glaciated mountain ranges, whose flow-off of water ensures the irrigation of fields. As the relation between man and environment must be considered to be particularly sensitive in the ecological border regions, the thesis was put forward in the programme committee, that a deeper understanding of the processes of settlement formation and decay can only be achieved if one starts out on the basis of an environmental analysis that is relevant to present conditions and integrates questions concerning the history of the ecological environment into the overall picture.

From a **cultural point of view**, the transverse valleys of the High Himalayas have been traditional transit areas but due to their remoteness areas of cultural isolation at the same time - an approach not only to explain the ethnic, linguistic and religious diversity but also to explain the conservation of cultural relics, both documented within the cultural landscape. The High Himalayas today represent the most significant refuge for Tibetan religion and livelihood. Given the destruction of monastic culture and the drastic changes in social and economic structures in Tibet, Tibetan tradition and high culture, documented in a unique form of

architecture, and in a rich literature, has been preserved mainly here, being available for study by Tibetological research. The High Himalayas are doubtless an as yet unexplored field of research for the disciplines that have been integrated into the research programme.

High-mountain environment and settlement processes

The first field research was begun in the autumn of 1991, in the southern Mustang District. The work, combining the disciplines of cartography, architectural history and above all settlement geography, concentrated at first on the example offered by the village of Kagbeni and the valley of the Dzong Chu (Muktinath valley). Several results, still preliminary in nature, will be presented here.

The aerial photograph (attached to this volume) taken from a helicopter shows the village of Kagbeni and the surrounding fields and countryside in the valley of the Kali Gandaki in northern Nepal. The predominating grey and brown sand colours are reminiscent of the dry Tibetan Plateau. The view extends far down the valley southwards to the main crest of the Himalaya with the glaciated 8,167-metre pyramidal summit of Dhaulagiri. Situated in the rain shadow of the High Himalayas, the region experiences so little precipitation (200-300 mm/year) that the cultivation of crops is only possible in artificially watered oases. Fluvial fan plains that project out from side valleys into the main valley of the Kali Gandaki are favoured locations for settlement and irrigated agriculture. This applies in particular to the village of Kagbeni (2,280 m), located on the fan plain of the Dzong Chu (Fig. 3): sediments recently deposited on the fan plain can as a rule be easily tilled; the slightly inclined surface facilitates the layout of a network of irrigation channels sufficiently supplied with water the whole year round by the glacier-fed Dzong Chu. A suitably long vegetational period allows for two harvests in the fields: winter barley and buckwheat. Harvest yields on the calciferous, well fertilized and irrigated soils are strikingly high, attaining not seldom a 15-fold return on the initial seed. Still, they are not enough to feed a family for the entire year, as the cultivated plots are extraordinarily small, and do not exceed an average of 0.6 ha. For this reason, besides animal husbandry, trade with Tibet has traditionally been important, and nowadays tourism offers additional income. Apple trees have been cultivated over the past 25 years with astonishing success, but except for pilgrims and tourist trekkers who stop over in Kagbeni, there is little demand.

The landscape, redolent of Tibet, obviously exercises a particular fascination over trekkers. The village of Kagbeni with its densely crowded houses, carefully parcelled and terraced fields, the palace ruin and the red gompa, a Buddhist temple visible for miles around, attracts growing numbers of tourists from year to year. The harmony of a natural and cultural landscape offered by the photograph taken from the air in autumn 1991 is nevertheless misleading: the mountain village of Kagbeni has had to fight against ecological problems and natural hazards that may occasionally take on catastrophic proportions - and this since many centuries.

What has proved to be a special kind of ecological handicap in climatic terms, and is regarded as unpleasant both by the native population and by tourists, are the daily recurring valley winds that are familiar to the transverse valleys of the Himalaya. These thermal induced anabatic winds compensate the horizontal

gradient of temperature respective of air pressure between the Himalayan foreland and the Tibetan high plateau north of the main Himalayan range. The valley wind, which in the summer sets in around 10 o'clock, and in the winter around 12 o'clock, quickly and uniformly attains storm-force values of between 70 and 90 km/h, subsiding only towards sunset. One constant peril, for example, is represented by the stones set rolling by the wind onto the path that leads along the cliff opposite Kagbeni (Fig. 3). It was only to be expected that the modern wind generators should have since been torn to pieces by the strong, gusty winds. The only oases of windlessness during the day are the zigzag village lanes and the enclosed inner courtyards of the houses.

Along with the wind, the erosive power of the water plays an important role in ecological terms. Annually, during the monsoon period in summer, and coinciding with the melting of snow in the high mountains, the flow of water in the Kali Gandaki rises to from 12 to 14 times its former rate, and the erosive power of the river increases correspondingly. It is particularly parts of the settlement, including the gompa, as well as entire portions of the agricultural land, that are most at risk from the regular erosive undercutting of river terrace rims.

Of catastrophic effort, finally, is the sudden outburst of glacier- or moraine lakes. According to our information, the last bursting of a glacier lake occurred at Thorong Pass approximately 30 years ago. The flood produced thereby considerably widened the bed of the Dzong Chu, as can still be clearly seen today (Fig. 3), and also swept away groups of houses and portions of the farmland. A similar type of catastrophic flood occurred in August 1987, in this case caused by a flooding of the Kali Gandaki. The outburst of lakes dammed by glaciers or moraines and the resulting flood wave are not only a constant source of danger for settlements in valley locations, but also can alter or destroy the traditional irrigation systems by shifting or deepening the channel beds.

Abandoned sites as evidence of settlement processes

Whether it is the case, though, that the numerous deserted settlement sites and abandoned fields are the result of natural hazards or whether other reasons (economic, political, religious) were the decisive ones is a question that will engage the energies of the research programme in upcoming years. The ruins of settlements, fortresses/palaces and monasteries, abandoned fields and deserted groups of once inhabited caves are a striking feature of the cultural landscape of the High Himalayas, being common in northern Nepal, Ladakh and Tibet. As the most important evidence for past cultural conditions alongside historical texts (e.g. legal documents, village chronicles; e.g. PANT & PIERCE, 1989; SCHUH, 1992), they may provide an idea of who the one-time inhabitants were and the latter's economic way of life, their territorial conflicts and the past phases of settlement rise and decay. The climatic aridity and low settlement density have been essential contributing reasons why settlement ruins have been well preserved and clearly visible up to the present, and thus subject to mapping by means of field surveys and aerial photographic analysis. If there is still a long way to go in the study of the causes of the abandonment, nevertheless, from the distribution and typology of the abandoned sites, preliminary statements can already be made as to why such a heavy concentration of relict-related elements should occur where they do - for example, in the

Muktinath valley. An explanatory approach based on a single cause may certainly be ruled out from the start: the joint influence of natural and cultural factors in this region is too complicated.

If one takes a look at the map (Fig. 4), the large concentration of abandoned sites in the region of Baragaon in southern Mustang is immediately apparent. Highly diverse types of such sites (cave settlements, abandoned villages and fields, fortress/palace and monastery ruins) lie along rivers between 2800 and 3800 m as well as in the valley basins of the side valleys of the Kali Gandaki, where conditions are favourable for settlements. The valley of the Dzong Chu with its more than 40 abandoned sites within a stretch of only 10 km displays a particularly high concentration of such sites.

The cave settlements, which go back to prehistoric times (SIMONS, 1992-93), presumably represent the oldest evidence of settlement in this region (Fig. 5). First surveys by Tibetologists and archaeologists (SCHUH, 1992; SIMONS, 1992-93), have shown that numerous separate caves, formerly serving various functions (habitations, storage facilities), where here combined into residential complexes and hollowed out of the conglomeratic cliffs into storeys one over the other. Today they are preserved for the most part as fragmentary systems, the steep walls of conglomerate from the glacial period being extremely subject to erosion. One needs to ask how the caves were accessible in the first place to their former dwellers, as nowadays they are mostly located at unattainable heights. The location of the caves, with their favourable exposure to the sun, is striking - an indication that the early cultures had climatic and ecological considerations in mind when choosing sites for habitation and knew how to exploit the high intensity of radiation in subtropical high mountains to compensate for the low air temperatures in high altitudes. Cave communities of this type are common not only in Mustang District, but also in south-western Tibet, particularly in the former kingdoms of Guge and Purang. Only excavational and related research work undertaken by archaeologists will be able to produce secure results concerning the prehistoric use of the caves. Their present-day scattered use as meditation caves and buddhist temples (Purang), together with numerous wall paintings and reliquaries, point to a more recent, religious motivated phase of use, which must have begun at the earliest during the introduction of Buddhist teaching in Tibet in the 7th century A.D.

Village ruins are situated in front of two of the largest cave communities (Phudzeling, Mebrak), and in the case of Phudzeling (Fig. 4 and 5) there are also abandoned fields. Inspite of first results concerning the place in time assignable to the use of the cave sites (SIMONS, 1992-93), the motivs of their establishment and their abandonment are not yet clearified, thus, the questions that arise in this context are all the more wide-ranging: Who were the cave dwellers? Where they the same ethnic group that lived on the land down beneath, possibly at a later time, or were they other migrant ethnic groups? Nothing has been handed down, either in the written or in the oral tradition, concerning the cave settlements and their inhabitants - this in contrast to the abandoned villages across the way. A mythological story, for example, is told in the case of Phudzeling. A demon that had the head of a lion and the body of a serpent is said to have destroyed the village (Phudzeling) along with another one (Kak Nyingba), whereupon the surviving inhabitants of the two villages got together and founded a new settlement, namely, present-day Kagbeni. It is perhaps significant that this mystifying story is told in connection with a

report about natural hazards (floods caused by the outburst of glacier lakes)? At present, one can only speculate about the reason for the abandonment of the village, but one thing is certain: The present inhabitants no longer wish to use the settlement or the surrounding fields of Phudzeling, even though the irrigation of fields may be still quite feasible there. This example shows that such widespread abandoned sites cannot be explained, as frequently reported, chiefly in terms of insufficient irrigation facilities resulting from climatic changes, but that a more subtile view of things is called for, one taking into account other factors, such as natural hazards, conflicts in land ownership and land use, epidemics etc.

Whereas a dating of the abandonment of settlements and their associated fields has just started, there is already extensive oral and written material available concerning the founding of the fortresses and fortress settlements that today lie in ruins (cf. SCHUH, 1990, 1992; JACKSON, 1978; KRETSCHMAR, 1985). According to SCHUH (1992), the fortresses of the Muktinath valley were constructed in the second half of the 15th century by members of a Tibetan noble family. They are situated at strategically favourable locations - the fortress of Dzong is one example of this (Fig. 6) - and expressed the political and economic power of the local territorial princes, who reigned for over 3 centuries. With the campaigns of conquest undertaken by the Gorkha kings at the end of the 18th century, the rise of the kingdom of Nepal and, above all, the suspension of taxation authority during the past century (Rana rule; cf. REGMI, 1970-89; SCHUH, 1992), the territorial princes were deprived of their economic and political preeminence. A visible expression of the gradual loss of power was the decay of the fortresses and palaces, which in Kagbeni was speeded along by an earthquake. Closely associated with the change of local political power structures were the founding of new settlements and the abandonment of old ones. In comparison with the case of fortresses, the reasons for these settlement processes are far less understood. Similarly fragmentary is the present level of knowledge concerning the numerous decayed monasteries and monastic settlements (Fig. 4) in that region. Muktinath is still today one of the most significant Hindu and Buddhist pilgrimage centers of the Himalayan region, but formerly it attracted not only pilgrims but also representatives of a wide variety of religious schools, which established there an institutional presence for themselves. Numerous monasteries that today lie in ruins bear testimony to the former period of Buddhist flowering.

In summary, it may be said that we are dealing with a high-mountain region which has probably been inhabited for thousands of years and been culturally influenced by different ethnic and cultural groups, and which has had a very chequered history, including military conflicts, periods of economic and religious prosperity, but also periods of decline. The reason why Mustang has repeatedly seen the site of military conflict during its history is presumably connected with its geographical location. In extending from north to south along the Kali Gandaki valley, the region joins in an ideal manner the high plateau of Tibet with the Nepalese Himalayan foothills and so with India. Even in earlier times, the Kali Gandaki was thus a favoured route of trade (FÜRER-HAIMENDORF, 1975; GRAAFEN & SEEBER, 1992-93) along which primarily grain from the south was transported in large caravans to Tibet, and salt from the north to Nepal and India. The ability to exercise control over such a route has meant from times long past political power on the one hand and economic gain on the other.

(Translated into English by Philip Pierce)

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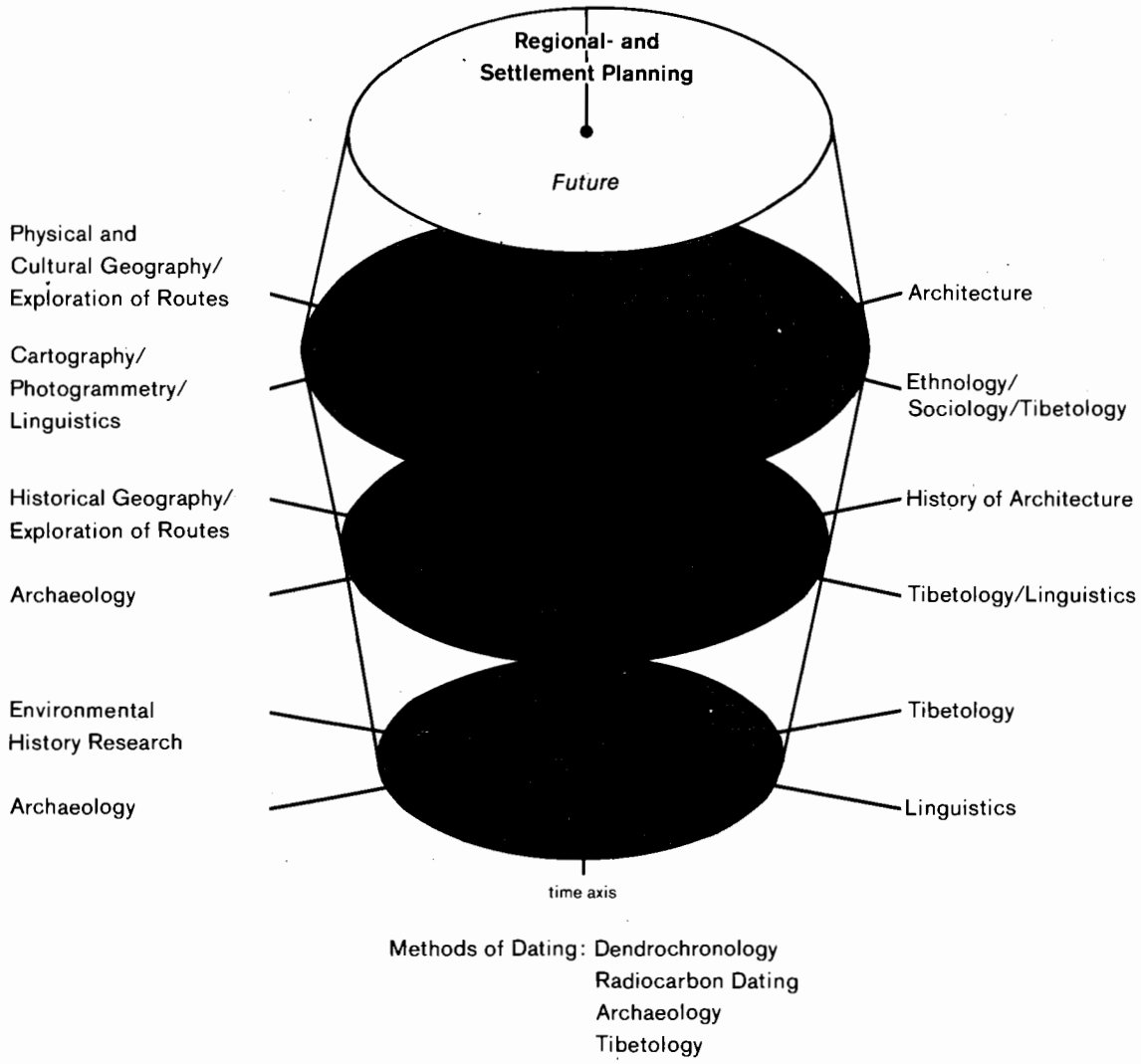
Settlement Dynamics and Nation Building as Interdisciplinary Research Task



Draft: W. Haffner, P. Pohle

Fig. 1: Settlement processes and the formation of states as interdisciplinary research task (altered draft of LIENAU, 1972)

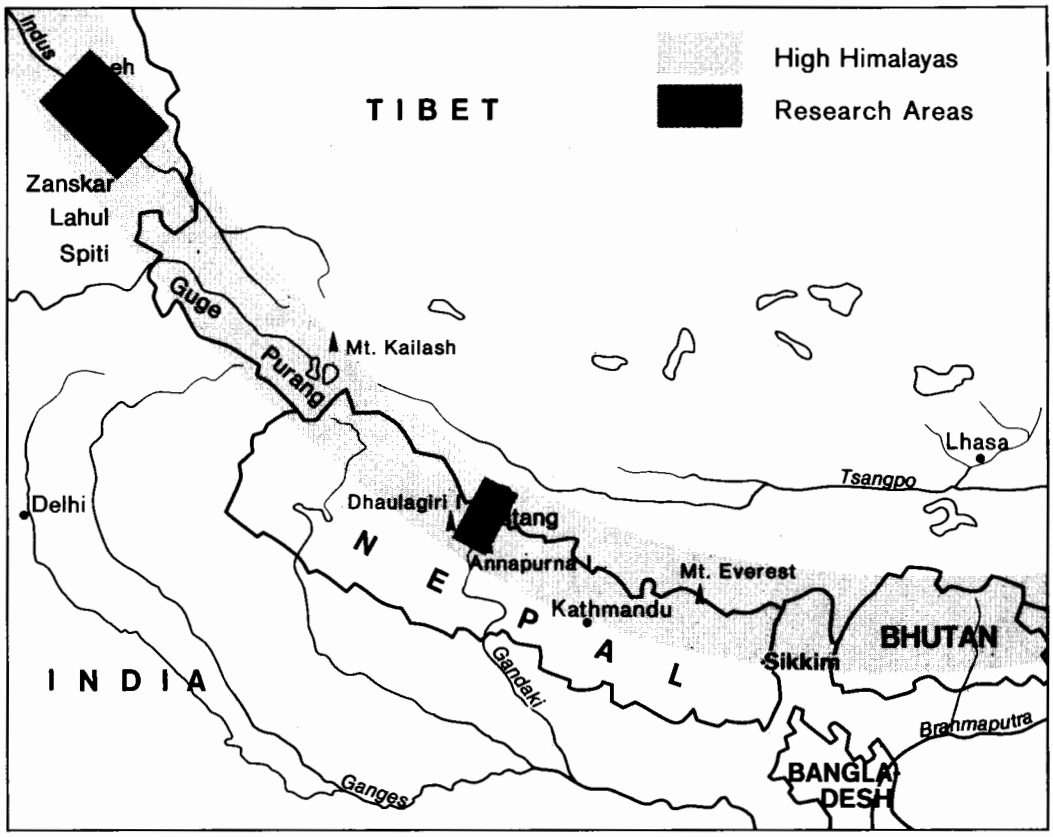


Fig. 2: The High Himalayas as spatial frame of the research programme and the particular research areas

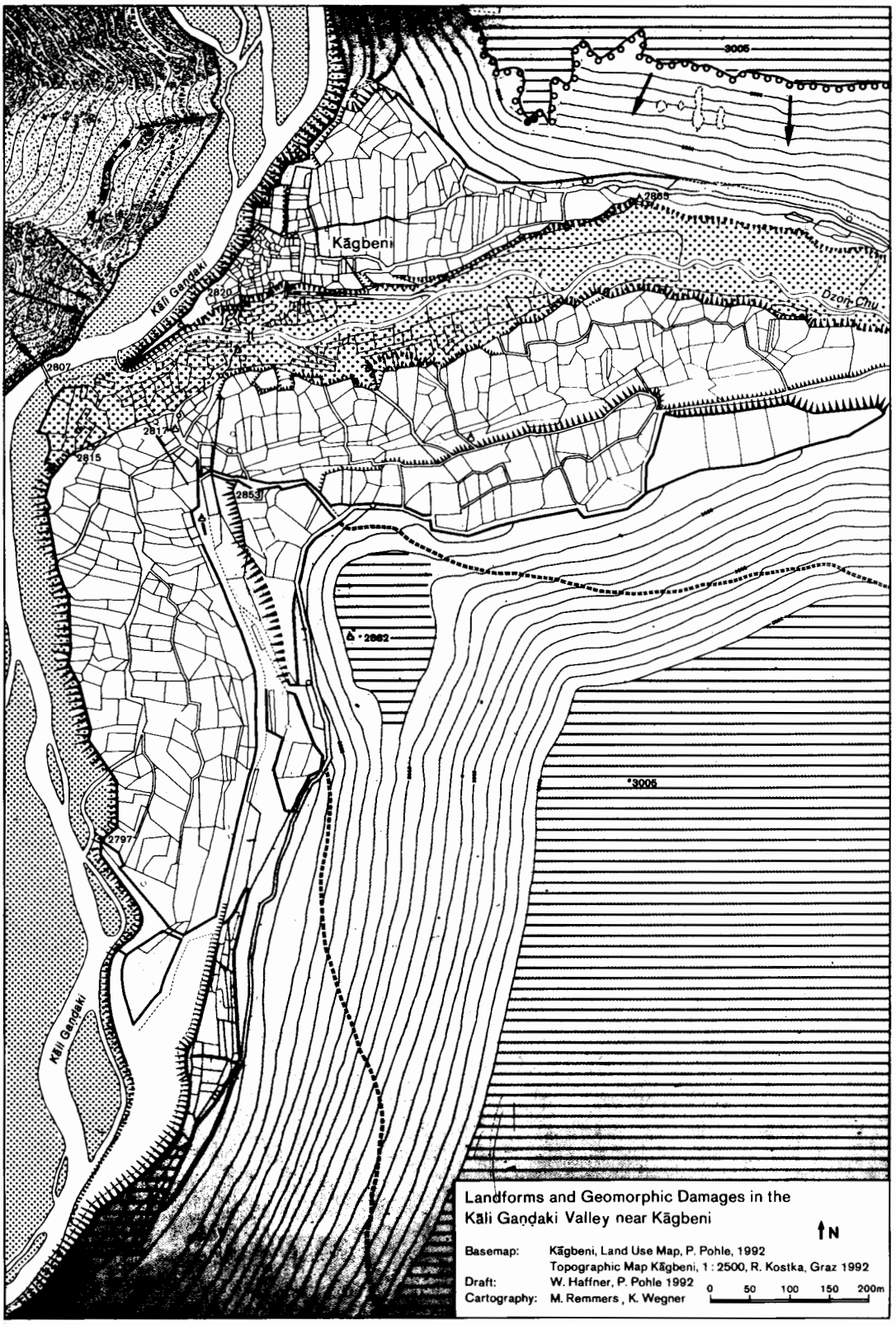


Fig. 3: Landforms and geomorphic damages in the Kali Gandaki Valley near Kagbeni

Landforms and geomorphic damages in the Kāli Gaṇḍaki Valley near Kāgbeni

	Geologic/geomorphic units	Erosion processes by:	
		running water	wind
	Active recent flood plain and river deposits of Kāli Gaṇḍaki	Lateral erosion, shifting of river channel caused by flood and by outburst of moraine-dammed or fluvial-wash-dammed lakes	Deflation of sand and silt
	Edge of fluvial terrace deposits	Endangered by river erosion	
	Recent river deposits of Dzoṅ Chu	Shift of river channel, extremely endangered by outburst of lakes	
	Edge of fluvial terrace	Endangered by river erosion	
	Fluvial fan plain of Dzoṅ Chu	Endangered by migrating river channels and extreme floods caused by outburst of moraine-dammed or fluvial-wash-dammed lakes	
	Quaternary sediments (conglomerates, silty sediments, loess etc.)	Stone and boulder fall, regressive erosion of the face of the slope	Wind erosion
	Quaternary sediments covered with slope debris	Slope debris slides	Wind erosion
	River terraces		Wind erosion
	Quaternary conglomerates/ remnants of an older river terrace/ anthropogenic caves	Stone and boulder fall	Wind erosion
	Bedrock of cretaceous age (Neocom/Aptien)	Slope debris, slides, stone fall	Stone fall partly induced by wind

Deserted settlements and fields - classification and regional distribution

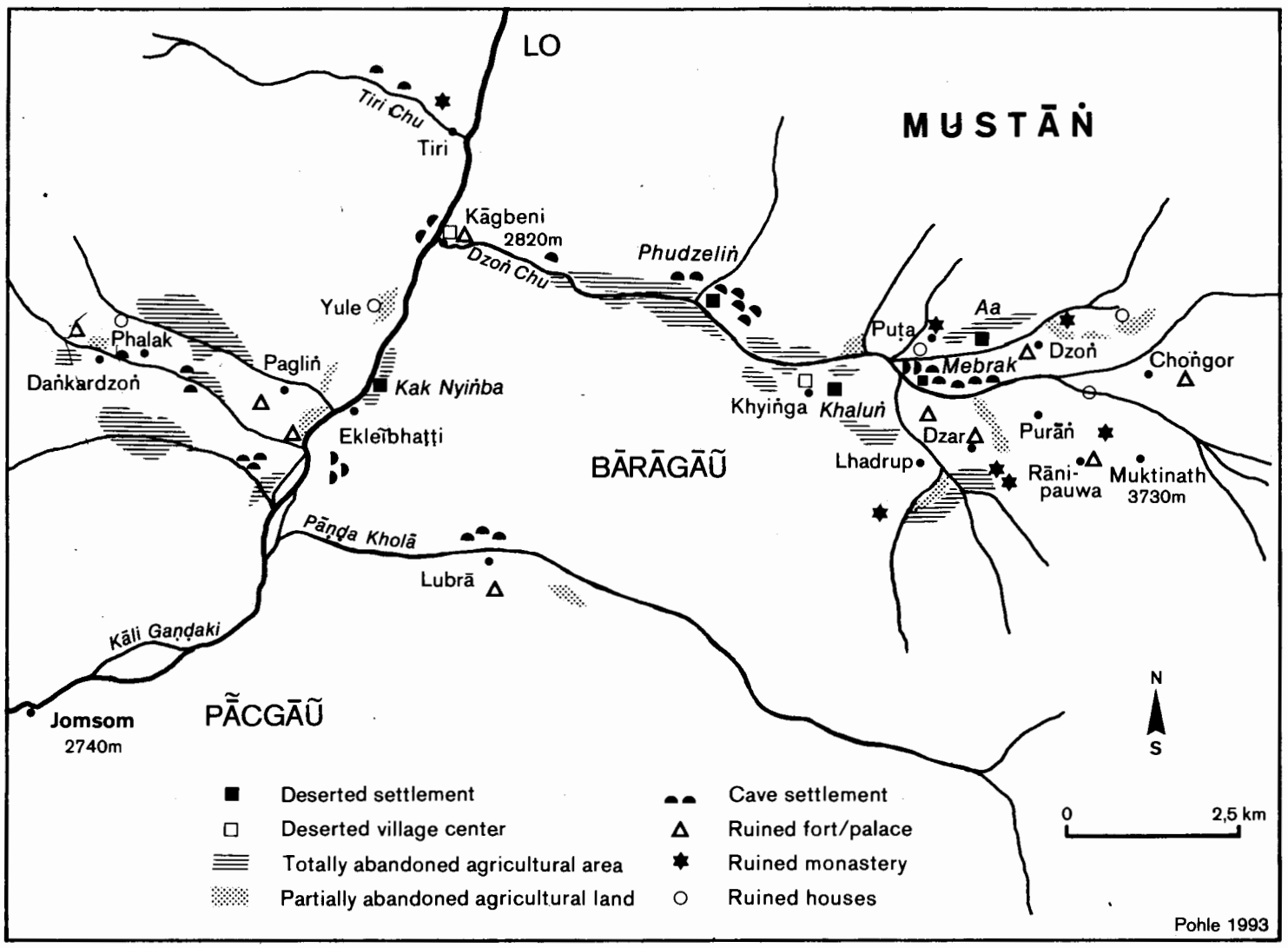


Fig. 4: Deserted places in Baragaon , their classification and regional distribution

Fig. 5: The caves and the abandoned settlement and fields of Phudzeling (3,060 m) in the Dzong Chu Valley (Pohle, Oct. 1987)

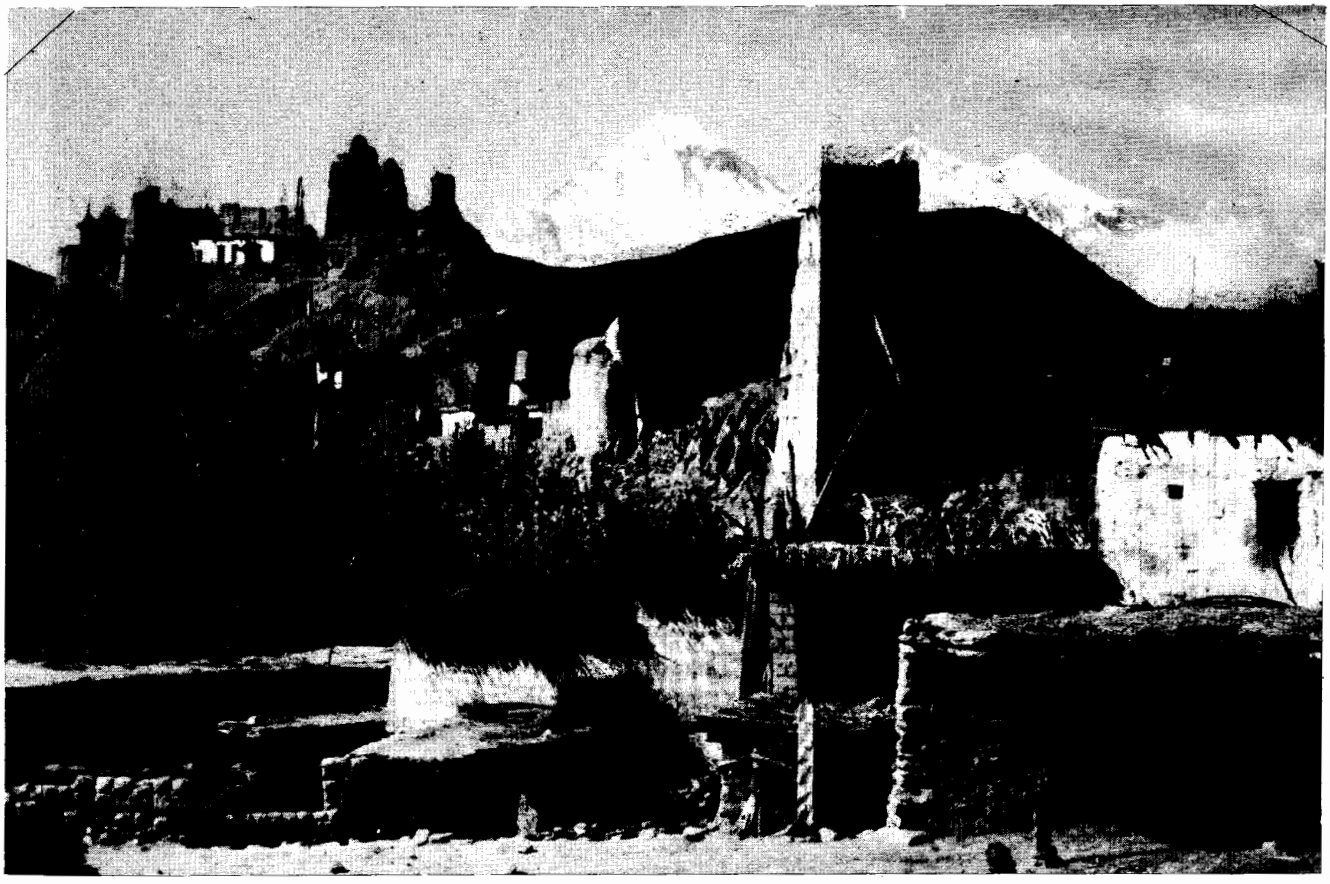


Fig. 6: The ruined fort of Dzong (3,580 m) in the upper Muktinath Valley with the Dhaulagiri (8,167 m) in the background (Pohle, Oct. 1991)

Aerial photograph of Kagbeni (2820m) in the Kāli Gaṇḍaki Valley with the Dhaulagiri Himāl (R. Kostka, Nov. 1991).

Geographical Research on the History of the Cultural Landscape of Southern Mustang

The Land Use Map of Kagbeni as a Basis[1]

Prof. Dr. - Perdita Pohle
Geographer

1. Programmatic layout of the study, aims and methods

Within the Nepal-German Project on High-Mountain Archaeology (cf. SHRESTHA, 1992-93) the geographical research project is concerned in particular with historical-genetical research into rural settlements and their historical environment in the Central Nepal Himalayas, above all in the region of southern Mustang District. One main goal of the project is to study the settlement history and with it the history of the natural and cultural landscape of the present-day Mustang District, which for centuries, perhaps in fact for millennia, has been a region of habitation despite its harsh and unfavourable environmental conditions.

Such being the overriding aim, the project falls methodologically within the bounds of historical-genetical settlement geography, which in Central Europe looks back over a long tradition of research. First of all, it is concerned with questions linked to the past - e.g. the origin of settlements, establishing motives for the founding of settlements and the preference for particular sites - and, secondly, with questions relating to the development history (genesis) of settlements or settlement regions. A precondition for any explanation of settlement origins and growth, however, is an accurate collection and description of data. The retrospective method (JÄGER, 1973) offers one way of viewing the problem. It works from the premise that the present-day appearance of a cultural landscape, and thus also the settlement situation, can only be clarified on the basis of the past and should therefore be studied by going backward in time.

In adherence to this method, the present project attempts to trace the development of the settlement region step by step into the past from the present and to educe the forces influencing the settlement process (e.g. natural, economic, social, political). Conversely, stages in the past cultural landscape can be better understood and explained by insights into the current situation. In line with this, the purpose of the localized study of the patterns in Kagbeni's cultural landscape is:

1. to describe and classify present-day land use and settlement structures in their geographical and ecological setting,
2. to provide insight into the land use and settlement systems, and
3. to enable preliminary formulations concerning the historical land use and settlement development.

In order to meet these goals, the following field surveys were conducted:

- obtaining the cadastral maps and copying the land register;
- mapping land use on the basis of the cadastral maps;
- asking local farmers about the land use system (cropping calendar, irrigation system, harvest yields, income structure, pasturage);
- interviewing local experts on the genesis of the settlement;
- in collaboration with W. HAFFNER: the disposition of settlement and fields within the ecological environment;
- in collaboration with the cartographer R. KOSTKA: the disposition of the settlement and farmland within their topographical setting;
- in collaboration with the linguist R. BIELMEIER: a survey and transcription of toponyms.

The research was carried out during field trips to southern Mustang in October/November 1991 and March/April 1993; the area under study, however, was already known from previous visits in 1983, 1984 and 1987. Since the project is still in its beginning stages, many questions that arise during the analysis of data collected in the field will be answered only during succeeding studies. Nevertheless, first results are available in the form of the land use map of Kagbeni (cf. map enclosed), a detailed account of which will be offered here.

2. Why Kagbeni?

There were several reasons to begin the geographical settlement studies in Kagbeni (cf. aerial photograph enclosed):

a) The location of the settlement
Given its location in the northern Nepal Himalayas (Fig. 1), its environmental features (dry high mountain region) and its Tibetan-speaking population, Kagbeni can be assigned to the region of the High Himalayas characterized by Tibetan culture and tradition, in which the project of the research programme as a whole is spatially concentrated (cf. Fig. 2, HAFFNER & POHLE, in the present volume). What makes the settlement particularly interesting is its location along one of the historically most important trade routes of Nepal - the one leading up the Kali Gandaki through the main chain of the Himalayas and joining the Nepalese middle ranges and the Ganges lowlands with the Tibetan plateau in a nearly ideal manner. In addition, however, from Kagbeni there are also routes leading to points west, to the regions of Dolpo and Jumla, as well as to points east, to the region of Manang, linking these areas to the main trading route.

b) Witnesses of the past

In order to be able to reconstruct the settlement history of a region, a prerequisite is evidence of former conditions, which may be present, for example, in the form of historical texts or settlement ruins. This favourable situation obtains in the case of Kagbeni. Thus, for the period after 1790, numerous edited and translated Nepali administrative documents already exist (cf. PANT & PIERCE, 1989; REGMI, 1970-89). Besides these Nepali documents, however, Tibetan written material has been discovered by D. SCHUH and colleagues and been made available for further research purposes. They are primarily texts of the *bem-chag* genre, in which matters relating to village polity are addressed (cf. SCHUH, 1990, 1992). As witnesses of the past, along with the written sources, there are settlement relics in the close vicinity of Kagbeni - for example, the anthropogenic caves on the other side of the Kali Gandaki as well as the ruined settlements of Phudzeling and Kak Nyingba. Additionally, the now greatly dilapidated palace ruin in the middle of the village bears witness to the former significance of Kagbeni as a feudal power.

c) Practical reasons of research

With other projects within the focus programme having already begun their surveys in Kagbeni, favourable conditions obtain there for interdisciplinary collaboration. Alongside the Tibetological project that has been analysing historical texts (D. SCHUH, C. RAMBLE), a detailed ground plan of the locality has been produced by the architects (N. GUTSCHOW and colleagues) based on a terrestrial-photogrammetric survey (R. KOSTKA). Individual edifices, particularly the run-down palace, were measured in detail to analyse the architectonics and architectural history of the buildings. Samples of building timber were taken for dendrochronological dating and analysis by B. SCHMIDT (cf. SCHMIDT, 1992-93); these have enabled a first assessment of the age of building material and a determination of the various stages of construction. In cooperation with the linguistic project (R. BIELMEIER, S. GEORG), the toponyms in and around Kagbeni have been registered and a topographic map incorporating the toponyms is now under preparation. What - from the point of view of settlement geography - was of decisive importance for the choice of Kagbeni was, alongside the interdisciplinary approach, above all the existence and availability of cadastral maps and land registers, without which a mapping of land use and ownership would have been impossible.

3. The land use map of Kagbeni

Five cadastral maps drawn to a scale of 1:1250 and the topographical map of Kagbeni drawn to a scale of 1:2500 (cf. KOSTKA, in the present volume) served as the cartographic basis for the mapping of land use. Whereas the large-scale map of KOSTKA is based on a terrestrial-photogrammetric survey undertaken in 1991 and as such reflects current topographical conditions, the cadastral maps date to a survey in 1975 conducted by the Survey Department. The latter thus needed to be worked over and brought up to date during the field survey. The main reason why a combination of thematic and topographic map was chosen was because the setting of settlement and fields within their natural environment is made immediately apparent, more so than it would have been by way of description, no matter how detailed. Besides data on topography and land use, the map contains additional information concerning the function of buildings and the crop calendar of Kagbeni obtained during the field surveys.

3.1 The natural setting

In the region of Mustang District, the Kali Gandaki flows for long stretches within a broad riverbed of recent fluvial material. The riverbed narrows at the settlement of Kagbeni (2820 m) due to the fan plain of the Dzong Chu on the orographically left side of the valley and the outcropping rock on the right (cf. aerial photograph). Here the two banks are only a few meters apart, so that they can be connected by a bridge. The Dzong Chu drains the Muktinath valley from east to west for a length of about 10 km, cutting ever deeper into the sediments of the Tibetan marginal synclinorium (cf. HAGEN, 1969) the farther west one goes. The detritus created by it is transported down to the confluence with the Kali Gandaki, where it is deposited in a fan plain up to 1.5 km wide and with a maximum thickness of 30 m. The settlement and the fields of Kagbeni are laid out on the fluvial fan plain of the Dzong Chu, a location that has numerous natural advantages to offer for both settlement and farmland:

- the relatively flat terrain facilitates the layout of houses and fields,
- irrigation water is readily available from the riverbed of the Dzong Chu,
- and further, the soil of the fan plain contains a large amount of silt, a good precondition for tilling the soil.

Alongside these natural advantages, however, note should also be taken of possible hazards arising from such a location (cf. HAFFNER & POHLE, in the present volume). Whereas the Dzong Chu accumulates large amounts of sediments along the fan plain, which may lead to mud-flows and the deposit of rubble, a high risk of erosion exists on the banks of the Kali Gandaki. Terrace rims frequently break off as a result of the river's constantly shifting its course and in the process variously undercutting the fan plain. In comparing the cadastral maps of 1975 with the state of the 1991 mapping, one learns, for example, that both individual parcels of land and buildings have been swallowed up by the Kali Gandaki. This applies particularly to the numerous fields at the edges of the southern fan plain along the Kali Gandaki (Fig. 2, part C) and the houses that stood close to the terrace rim (A).

To the north and south, the fan plain of the Dzong Chu is hemmed in by older river terraces. These consist of quaternary sediments, have relatively steep sides up to the level of the terrace and are only sparsely covered by vegetation. In spite of this, they still serve as pasture land, particularly in the winter, when the cattle are driven daily to the grazing grounds located outside the village.

Whereas the settlement site of Kagbeni can be judged to be favourable as far as topographical factors are concerned, reservations arise from the climatic point of view. Kagbeni is situated as an irrigated oasis in the middle of an arid mountain landscape which, in this portion of it, lacks all forest covering, and which is openly exposed to strong winds. Due to the north-south orientation of the Kali Gandaki valley, a large-scale exchange of air takes place between the Himalayan foreland and the high plateau of Tibet. In conjunction with the local slope wind circulations, this leads throughout the year to daily recurring strong valley winds, which may attain extreme velocities (cf. HAFFNER & POHLE, in the present volume). Whereas the villages in the side valleys of the Kali Gandaki, like the ones in the upper Muktinath valley, are far less affected by the large-scale air currents, Kagbeni lies in the

major channel of air and from noontime on is openly exposed to the onset of strong winds. This situation makes itself felt in the form of adaptational principles governing the layout of the settlement and the method of house construction. Exposure to wind must likewise be regarded as unfavourable for crop cultivation, given that a heavy dispersal of fine soil particles negatively affects soil fertility. Attempts made to harness wind energy for the generation of electricity have so far failed. A wind power station hooked up to an electric power grid was constructed for Kagbeni in 1988 in the area of Phola Thanga, but it has only functioned for one month, as the rotor blades of the "wind wheels" were unable to cope with the extreme winds.

Even though no climate-related data are available from Kagbeni, precipitation and temperature records from the neighbouring stations of Jomsom and Marpha in the south and Ghami in the north (all three in the Kali Gandaki valley) convey an approximate idea of the climatic situation.[2] Thus precipitation figures decrease continuously as one proceeds up the valley. If an average of 372 mm of precipitation was registered annually during the period 1971-84 in Marpha, the stations of Jomsom and Ghami (1973-84) attained values of only 257 mm and 193 mm. Precipitation figures for Kagbeni ought to lie between those of the latter two stations mentioned. Such low precipitation values have consequences for crop cultivation, which is impossible in Kagbeni without irrigation, all the more so given that the wind and high radiation values greatly reduce air humidity. Temperature conditions, on the other hand, have to be regarded as advantageous, especially for the cultivation of crops. With an annual average temperature of 11°C (Jomsom, 1981-84), two harvests per year are possible in Jomsom and Kagbeni, and the variational span of cultivable products is relatively large. Despite this, in Kagbeni continental climatic conditions already prevail, which are felt in large maximum deviations in yearly and daily temperatures (cf. MEURER, 1982). Whereas the average monthly temperatures in the winter (January) in Jomsom lie around 3°C, they attain values in July/August of around 18°C (1981-84).

3.2 The land use pattern

In spite of its elevation at 2800 m and a pronounced aridity of climate, the natural conditions for growing crops in Kagbeni must be assessed in generally favourable terms. This is reflected both in the intensity of land use and in the crop yields.

3.2.1 The layout of field terraces and irrigation channels

The land of Kagbeni in use for agricultural purposes is an oasis of irrigated fields, encompassing the whole area of the fluvial fan plain, which is sharply delimited by walls from the surrounding pasture land (cf. map enclosed). Upstream, beyond the region of the fan plain, and not indicated on the land use map, lie two other smaller stretches of village land, one each on the orographically left and right river banks of the Dzong Chu (area approx. 3 ha). According to cadastral data, the entire area of surveyed land in use in Kagbeni (excluding pasturage) comprises 63.9 ha. Of this, 19.4 ha fall under river and path surfaces, 2.4 ha under channel and pond surfaces, 2.6 ha under wasteland, and approximately 4 ha have been built upon (houses and stables), so that the land in use for agricultural purposes in the end covers an area of only 35 5 ha. This is an extremely small figure in view of the fact that a

single middle-sized operation in Germany has something on the order of this amount of land to work with. In Kagbeni, however, the farmland is distributed among 53 households (Tab. 1), so that only about 0.67 ha of land on the average is available per household. It soon becomes clear that households in Kagbeni cannot live only from the crops they produce but must secure further income through livestock, trade or tourism.

The agricultural area on the fluvial fan plain is divided by the Dzong Chu into two parts (cf. Fig. 2), a smaller area to the north (A), on which the settlement is situated, and a larger area to the south. The latter in turn can be subdivided into three parts, with area (D) encompassing the higher lying terrace level, several field terraces of which are situated on steep slopes. Area (B) is on the same level as (A) and represents a lower riverbank terrace of the Dzong Chu, while area (C) has been built up out of both material from the fan plain of the Dzong Chu and from the deposits of detritus from the Kali Gandaki. This subdivision of the fan plain is of primary significance with regard to the quality of farmland; further, it gives an idea of the period of time these areas have been under cultivation. According to information supplied by local farmers, the fields in Sango (B) and Son (A) are of better quality, with their selling prices being accordingly high. The fields in area (C) and (D) are of lesser quality, the former for climatic reasons, the latter because of the topographical setting. Area (A) is also said to be the oldest farmland of Kagbeni, and it is not surprising that the oldest cultivated land is also the most valuable.

The fields are all terraced and levelled for irrigation purposes by means of stone walls (*singi tsikpa*) buttressing the terraces. The shape of the fields is determined both by the contour of the terrain and by irrigation constraints, and in addition is the outcome of land inheritance practices. A fundamental distinction must be made between the clearly delineated land use plots (*singa*) - signified on the map by dotted lines - and the land tenure plots (*sing dagpo*), the latter of which can be identified only from the cadaster. The land tenure plots in Kagbeni are very small, for the most part situated randomly, and are of triangular to hexagonal shape. In individual portions of the agricultural land one can make out regularly laid out strips or blocks, as is the case above all in area (A), where the irrigation technique has conduced to such a division.

The traditional law of inheritance that used to be practised in Kagbeni was that of primogeniture. In traditional Kakpa society, which was built on fraternal polyandry, the eldest son inherited the whole of the land property, the second-born of three sons was sent to a monastery and the youngest worked on the fields of the eldest. The village land was thus divided among a fixed number of families, whose land holdings theoretically could not be divided (*trongba* estate). Within the past 30-40 years, however, the law of inheritance has changed, presumably due to the land reform measures taken during the fifties and sixties and the introduction of the Panchayat system in 1962.[3] Today the fields are distributed equally among the sons, the daughters being provided with a trousseau. The consequences of the new inheritance practices can be seen already in the fact that the agricultural land is extremely parcelled, the individual farm size and the ownership of land are very small, and the fields of any one farmer nowadays lie scattered over the whole of the agricultural area of the community.

The irrigation of the agricultural land is carried out exclusively by way of channels (*yüra*), which

tap the water from the Dzong Chu approximately 2 km above Kagbeni. As the area drained by the latter extends up into the glacier regions of the Damodar and Muktinath Himal, the river flows with water throughout the year. Today there is no lack of water for irrigation in Kagbeni, as stated explicitly by local informants. The channels run along the slope on both sides of the valley and consist mainly of open conduits, though at several places they are covered over as a precaution against landslips. Intervening rock is bridged by open bamboo pipes. The channels are subject to a high degree of evaporation and runoff, but as the quantity of water is sufficient, such loss is not significant. Numerous distribution channels branch off from the main conduits; only the largest ones are indicated on the land use map. For irrigation purposes, the fields are subdivided by mounds of earth (*nangma*) that run perpendicularly to the irrigation channel at intervals of about 3 m. Similarly, along the side, a mound of earth separates the field from the irrigation channel, with one opening to the channel between each of the mounds (*ka*), which can be closed with a stone according to need.

Although today in Kagbeni there is water enough to irrigate the fields, this was not always the case. According to Dorje Thakuri, the long-time Pradhan Pancha of Kagbeni, a good portion of the irrigation network was paid for by the Thakali *subbas* (local tax collectors). For example, the irrigation on the orographically left side of the Dzong Chu valley (Sango Yüra) was purportedly built by Yeta Subba 50 to 60 years ago, including the dammed-up pond (Dzingu). Water was collected in the pond during the night, and in the morning the fields were irrigated. Nowadays the running water is enough to irrigate the whole agricultural land even with the pond being out of use. It is not really surprising that the initiative to construct the new system of channels came from persons of high standing. According to local informants the Thakali merchants manipulated the village people by lending money at high interest rates. In doing so, they soon developed an economic stranglehold over the village people and gained possession of the land of those most indebted to them (cf. FÜRER-HAIMENDORF, 1975:168). In the case of Kagbeni, for example, the irrigation system was improved only in the area where Yeta Subba owned most of the land. Whereas the irrigation facilities on the orographically left side of the valley thus are of more recent date, those on the right side were said to be very old. Since the old center of Kagbeni lies in this area, it seems quite plausible that area (A) represents the oldest part of the village farmland.

3.2.2 Crops and cropping systems

Two harvests a year are possible in Kagbeni (cf. cropping calendar on the map enclosed) thanks to the favourable temperature ranges and irrigation facilities. The staple crop is **barley**; the second harvest brought in is usually buckwheat, though it may also be potatoes or field vegetables. The cropping calendar commences with the sowing of barley in the middle of December of the preceding year. With its six months and ten days, winter barley has the longest ripening period of all crops and can be harvested only at the end of June or the beginning of July. If the winter has been very cold, the harvest occurs only after 6 1/2 months. In that case, however, not much time is left for preparing the fields for the planting of buckwheat. In Kagbeni a traditional kind of winter barley (*ne*) is cultivated, comprising two varieties of Himalayan covered barley (*soma ne* and *singtok*) that NAKAO (1956) has identified as *Hordeum vulgare* L. s. convar. *hexastichon* var. *hypathorum* and convar.

intermedium. No Tibetan naked barley is planted in Kagbeni, as is done, for example, in northern Mustang. Winter wheat is said to have formerly been planted in place of winter barley (cf. also KAWAKITA, 1956). According to local farmers, however, the harvests were very poor, so that now the practice has been discontinued. In addition it was mentioned that wheat has a somewhat longer vegetation period and therefore the buckwheat harvest was often at risk.

The second most important staple crop in Kagbeni is **buckwheat**. After the barley has been harvested, the fields are immediately ploughed, fertilized and, at the end of July and beginning of August, sown with buckwheat. A longer fallow period is not possible at this time since, given its ripening period of 108 days, the buckwheat must be harvested at the end of October or beginning of November, before the occurrence of the first frost. At the time the mapping of land use was undertaken in Kagbeni, the buckwheat harvest had just begun, with a delay in comparison with the neighbouring villages. Great haste was called for, as the first overnight frosts had already set in (14th Oct. -3°C). In spite of a large contingent of labourers, including helpers from Mustang, Dolpo and Gorkha, a failure of the crop could no longer be prevented. In that year, obviously, the monsoon ended earlier, the clear nights became colder more quickly, and the fields exposed to the Himalayas, such as those in Sung (C), were damaged by frost. After the harvest, the buckwheat is left in the fields for about one week to dry, before being transported to the village for threshing. Even though part of the harvest is lost during the transport, the people in Kagbeni, unlike those in surrounding villages, have not yet made the transition to threshing in the fields. They also have their own way of sowing, which occurs before ploughing the fields and may also cause some loss. After the harvest has been brought to the village, the cattle will be put out to pasture on the fields. In the meantime, the ploughing and the next round of fertilizing are begun. Following this, the fields lie fallow for about one month, only to be sown with barley and then reploughed in December. Buckwheat is undoubtedly a traditional crop in the Himalayas. According to MATSUOKA (1956), two cultivated species can be distinguished, which are planted only in the summer and can thrive to just below the maximum elevation possible (approx. 3900 m); *Fagopyrum esculentum* and *Fagopyrum tataricum*, the latter being cultivated only over 1500 m. In Kagbeni only *Fagopyrum esculentum (gyabre)* is utilized, while *Fagopyrum tataricum (thop)* is widespread in Muktinath and Lubra. According to MATSUOKA (1956) the former is among the oldest crops in the world and is now grown in Japan, China, other Asian countries, America and Europe.

Instead of buckwheat **potatoes** may be the crop following barley in the same year. The species in question ripens very quickly and is planted about 15 days before the buckwheat would have been (middle of July). Having a ripening period of three months, it is harvested in the middle of October. Another, slowly ripening species of potato is also planted, but it permits only one harvest per year. It is sown at the end of February or beginning of March and is harvested at the end of August or beginning of September. The planting of potatoes was introduced to Nepal at the end of the last century and has since been practised very successfully, particularly in the high mountain regions. As may be seen from the cropping calendar (cf. map enclosed), it fits seamlessly into the cropping system. As field vegetables, radish (*lou*) and beans (*bonde*) were reported to be cultivated traditionally in Kagbeni. The sowing occurs at the same time as buckwheat, in July/August. Following a ripening

period of three months, the vegetables are harvested right after the buckwheat. Numerous other vegetable species (cauliflower, cabbage, tomatoes, onions, spinach), most of them only recently introduced, are cultivated predominantly in gardens.

Alongside crops meant for human consumption, **maize** is planted in Kagbeni exclusively as fodder, particularly for goats and horses. It is sown in May/June and harvested after about three months, in August/September. Maize represents a new crop for Kagbeni, though its function as a supplementary fodder for the livestock should not be downplayed. While it grows there close to its maximum possible elevation, the cobs, according to local informants, nevertheless ripen. A greater danger for the maize harvest is represented by the jackals, which were observed in large numbers in the Dzong Chu valley close to Phudzeling.

Although apricot and peach trees count among the traditionally planted tree species in the valleys of the dry Inner Himalayas, their cultivation has only recently been improved systematically. In the Kali Gandaki valley the establishment of **fruit plantations** has been carried out now successfully for approximately 25 years. Getting their knowledge from the Horticulture Farm in Marpha, many Kakpa families have by now gone over to planting fruit trees in their gardens - primarily apple trees, apricots (*chuli*) and peaches (*khambu*). A small private apple orchard was created in Tangasa about 16 years ago. The apple harvest in Kagbeni is so good that a surplus is produced in spite of the local demand, including that of tourists and pilgrims. The only problem at the moment is the limited market for the fruits and their products, such as jam.

Apart from the fruit trees, numerous willows and poplars have in recent years been planted along the irrigation channels, in the riverbeds and in areas subject to erosion, particularly within the framework of various projects. They not only contribute to stabilizing the soil but also serve an important function as a source of fodder (willows) and, in the end, of firewood and construction timber (poplars).

3.2.3 Harvest yields and income structure

The harvest yields achieved in Kagbeni, with the exception of the potato harvests, must be said to be very good, lying above the average values of the neighbouring villages (Tab. 2). Particularly high are the yields of barley, which not seldom bring up to an 18-fold return on the invested seed. The buckwheat harvest, producing a maximum yield of 10 pathi, can also be assessed as good. It must be realized, of course, that the yields depend heavily on the changing influence of the weather from year to year, which may shorten the cultivating period and thus place particularly the buckwheat harvest at risk.

The high yields in Kagbeni are due, in the first place, to natural preconditions that are relatively favourable for agricultural pursuits (calcareous, silty fan plain soils, suitable thermic properties, sufficient irrigation); secondly, they are the result of intensive farming. Thanks to the planting of a winter and summer crop, the vegetation period is optimally exploited, crop rotation is practised to help better regenerate nutritive substances in the soil, the irrigation technique is optimally employed and, finally, fertilizing is carried out by means of qualitatively high-grade goat dung. One innovation is the practice of multiple cropping, which in Kagbeni comprises various forms of relay and mixed cropping (cf. BEETS, 1982:3). In relay cropping, for example, potatoes and

buckwheat, maize and buckwheat, or potatoes and radishes are cultivated simultaneously in the same field. These combinations all have the purpose of preventing an unbalanced removal of nutrients from the soil, such as would happen from the cultivation of a single crop. The present-day system of land use in Kagbeni shows very clearly that the farming population keeps an open mind with regard to innovations. Experiments have been made not only with the cultivation of new food plants (potatoes, maize, vegetables, fruits) but also with new forms of cultivation (multiple cropping). If the cultivation proved to be ecologically suitable and sustainable, it was integrated into the traditional land use system; if not, as in the case of winter wheat, it was quickly given up.

In spite of the high yields, the harvest in Kagbeni, according to local informants, is enough to feed only about one-fifth of the local population for the whole year. The remainder of the population must buy additional food grains, and this they do particularly in the case of rice. The reason for the lack of self-sufficiency in grains lies primarily in the small size of fields, that is, in the small size of the land holdings of the majority of the population. In spite of the lack of agriculturally exploited land, it seems that the Kakpa are at present not prepared to expand their holdings to neighbouring areas. Both in Sangda and in Phudzeling, the recultivation of abandoned fields was discussed during the Panchayat period. In the case of Sangda, the idea was rejected because valuable pasture land would be forfeited there. In Phudzeling, still no Kakpa family is willing to till fields because the area has a bad reputation according to mythological tradition. Instead, the latter area has been offered to the government for planting apple orchards, but this has not yet occurred. One basic factor that militates against the expansion of fields, however, is the lack of available manpower in Kagbeni. Even today the labour force is not large enough for the sowing and harvesting periods, so that helpers from the surrounding regions have to be hired. For this reason alone, the cultivation of remote fields is hardly feasible.

In open contradiction to the actual scarcity of agricultural land is the fact that 63 plots were not being cultivated at the time the land use map was being compiled. The reasons for this will become clear from a look into the land register and at the topographical features of the parcels. The numerous abandoned fields that are grouped around the wind power station were sold by the farmers for the construction of the station. The other unused fields are in part government land or *guthi* land, that is, land that is either community property or in the possession of monasteries. Several abandoned fields, however, belong to one of the richest men in the village, who has only his optimally situated parcels under cultivation. Further, a number of abandoned fields are located at spots that are endangered by erosion, where planting appears to be too risky - for example, where a terrace rim has fallen off into the Kali Gandaki, or beneath the irrigation channel running between levels (D) and (B) of the fan plain. Some parcels have presumably been lying fallow for years, as indicated by the high concentration of *Artemisia* on them. Another reason that may have led to the abandonment of some fields is the emigration of individual families from Kagbeni. According to information supplied by local informants, approximately 18 families have moved to Nagaland (Northeast India) and three or four families to Kathmandu during the present generation.

Since agriculture alone is not sufficient to sustain the village population of Kagbeni, most households combine agriculture with animal

husbandry and trade or tourist-related activities. Mixed economies are a characteristic feature for most of the mountain dwellers and seem to be traditional in the case of the Kagbeni population as well, although the emphasis on one or the other branch may have changed during the course of time. Today agriculture in irrrigated fields provides the population with the bulk of its food supplies, and herding is an important subsidiary branch of their economy. Mainly goats are raised, but in addition every family keeps three to six cows, and some have a pair of *dzo*. The *dzo* are primarily used for ploughing and come from Solu Khumbu. In the whole village there are only three *yak*, and they come from Dolpo. Moreover, each Kakpa family owns at least one horse. Several families (five or six) also have mules, which are put to use for the winter trade with Pokhara and also for the annual trading trips to Tibet.

Cattle and goats are kept in separate herds, which are watched over by professional herdsmen (*drokpa*), with four or five families combining their herds into a single large one. The high-mountain pastures are all located beyond the borders of the land use map, in the valley of Sangda and between Taye and Kagbeni. They stretch over a range of different elevations and are replenished in seasonal rotation. Only goats and bulls, however, are taken to the highland pastures, whereas cows, *dzo* and horses remain back in the village. For about one month in winter (November), all animals are confined to their village stalls. Whereas the goats are daily driven during this period to pastures near the village, the bulls, *dzo*, horses and mules graze on fallow fields. Hay and maize serve as the principal supplementary fodder during winter. A concentrated fodder is prepared for the bulls, consisting of *tsampa* mixed with dried and boiled radishes. The supply of meat in Kagbeni cannot satisfy the needs of the entire population, so that additional purchases, particularly of goats, are necessary from Tibet.

Along with stockbreeding, trade has traditionally been an important means for the Kakpa of supplementing their income. If in earlier times they were engaged primarily in the trade of salt and grain with Tibet, their trading activities shifted to places in India, following the political change in Tibet and the halt of the border trade. According to local informants, there were three people who built up their trade in Nagaland, in the extreme northeastern part of India, later sending for their family members and other relatives. Since then 18 Kakpa families have gone to live in Nagaland. If the selection of the migrants' trade goods once covered wool, musk, bear's liver and other medicaments, today they sell primarily clothing from Hong Kong along with numerous souvenirs. Some have achieved a respectable standard of living, the fruits of which they share not only with their relatives back in Kagbeni but also with the village as a whole, in the form of contributions for the *gompa* and public conveniences. At present, trade with Tibet is once again possible on a small scale, and once a year the Kakpa make a six- to eight-day trek to Likze Bazar to sell cotton and numerous other goods for daily use. From Tibet they bring back sheep, goats, salt and tea to Kagbeni. Besides this, the Kakpa also trade with the Lopa in northern Mustang, to whom they sell principally food grains.

With the opening of Nepal, tourism in the Kali Gandaki valley has developed into an increasingly attractive source of income for, among others, the Kakpa. Whereas in 1983 a total number of 21,119 tourists applied for a trekking permit covering the Annapurna, Manang and Jomsom Trek, in 1989 the number increased to 36,484.[4] About the half of them are doing the whole tour round Annapurna and only a portion of the tourists spend the

night in Kagbeni; many find quarters either in Muktinath or Jomsom. Still, there are by now seven lodges and seven shops in Kagbeni (1993), some of which draw a sizeable income from tourism.

3.3 The settlement pattern: a preliminary analysis

The rise in economic status that Kagbeni has undergone in recent years thanks to tourism on the one hand and foreign trade on the other is clearly observable in the present-day pattern of settlement. While the main village with its old center lies in the northern area (A) of the fan plain and forms a compact group of buildings, about 15 years ago construction was begun to found a new part of the settlement on the opposite side of the Dzong Chu (cf. map enclosed). There the houses are laid out one next to the other in rows, or else at present stand isolated, along the main travel route. Three lodges and three shops alone were newly erected. There has been a clear tendency for people to abandon their houses in the center of the village in order to construct newer, more spacious buildings on the periphery. The advantages are obvious: whereas the houses in the old part of the village are built extremely close to one another and nested one above the next, with the living space being relatively small and unlit, the houses in the new part of the settlement can be laid out more commodiously. A good example of this is the building of Nilgiri Lodge, which has a frontal length of 31 m, in comparison to a norm of only a few metres in the village core. In terms of infrastructure, too, the new part of the settlement is also well developed: there is a source of potable water, lines have been laid for electrification and the main travel route, of course, runs through it. However, the new location does have one drawback, and that is its extreme exposure to wind. Whereas the form of nested construction protects people from the wind in the old part of the village, the newly constructed isolated buildings are highly exposed to it - a disadvantage that can be at least partially compensated for by the use of glass windows.

Administratively, the village today belongs to Mustang District and, on a lower level, to the Kagbeni Village Samiti (former Village Panchayat), which comprises six permanent settlements of which Kagbeni is the largest one (Tab. 1). According to census figures, in 1981 Kagbeni had 239 inhabitants distributed among 53 households (Tab. 1). The latest population records of April 1993 collected on *gaon samiti* level, report a population of 326 inhabitants in 65 households. The insular location of settlement and surrounding fields in the middle of a steppe-like high-mountain semi-desert is characteristic of the Kali Gandaki valley in the region of Mustang District. These settlements often lie several kilometres apart from one another so that, at 3.6 persons/ km^2, the population density is extremely low (Mustang District, census 1981).[5]

According to an old administrative system of districting, four regions are distinguished from north to south within Mustang District - Lo, Baragaon, Panchgaon, and Thak -, which still exist as regional designations (Fig. 1). Kagbeni belongs to the region of Baragaon, which comprises 18 or 19 villages today. In 5 of them a Tibeto-Burman language is spoken, in contrast to the others, including Kagbeni, where a western Tibetan dialect predominates (BIELMEIER, 1988; RAMBLE, 1990). Not only due to their Tibetan language but also because of their Tibetan religious and cultural traditions, the inhabitants of Kagbeni are called Bhote by their

southern neighbours, though they call themselves Kakpa.

3.3.1 Evidence relating to the founding and the genesis of the settlement

Little has been known up to now concerning the founding of the village. According to a story told by Dorje Thakuri, Kagbeni arose from the fusion of two older villages, those of Phudzeling, which lies upstream along the Dzong Chu and has since fallen into ruins, and Kak Nyingba, south of Kagbeni along the Kali Gandaki (cf. Fig. 4, HAFFNER & POHLE, in the present volume). The mythological tale told by him regarding the abandonment of the two villages concerns a demon, with the head of a lion and the body of a serpent, that supposedly killed off the inhabitants of Phudzeling and Kak Nyingba. It was a *lama* from Lubra (Yangton Lama) who finally managed to put an end to the killing by giving the demon *torma* to eat. An annual *torma* ritual for the demon is still held; it is called, simply, *lhabsang* and takes place next to the chorten on the way to Lubra, which still belongs to Kagbeni today. The surviving inhabitants of the two villages, which in the story are called upper Kak (Kak-tö) and lower Kak (Kak-mä), are said to have afterwards founded a new settlement, the present-day Kagbeni.

The story told by Dorje Thakuri contains striking parallels to the well-known legend concerning the founding of the Bon monastery of Lubra by the so-called Yangton Lama. It has been described by JACKSON (1978) on the basis of historical texts, by KRETSCHMAR (1985) on the basis of oral tradition, and by RAMBLE (1983) from a comparative perspective combining historical texts and oral tradition.

The Bonpo texts analysed by JACKSON (1978: 202ff.) mention a *lama*, called Yang-ston Shes-rab-rgyal-mchan, who is said to have come from Tsang in Tibet and to have lived from 1077 to 1141(?). In order to learn a certain orally transmitted meditational practice (*Zhang zhung snyan brgyud*), he wandered around for years in search of the Bon lama Rong-sgom-rtogs-med-zhig-po, until he finally found him in Lo. According to JACKSON, the texts provide no evidence that Yangton visited Serib (a kingdom corresponding roughly to the area of Baragaon) or spread Bon teachings there, but he did journey to Lo and stayed there for a while, thus setting a precedent that would be followed by his descendants (JACKSON, 1978:214). Of Yangton's three children, his second son became known as Klu-brag-pa, the founder of Bon in Serib, after having first subdued the local deity of Lubra (Klu-brag), a village in a side valley of the Kali Gandaki south of Kagbeni. It is not certain, however, that the founding of the Bon monastery in Lubra goes back to him directly. The exact point in time when this event occurred is likewise unclear - that is, whether Klu-brag-pa went to Lubra before or after his ordination, which he received at the age of 30 in Tsang (1161?). He is said to have died at 84 (1215?), but his lineage continued, particularly in Dolpo, where it developed into an important line of Bonpo priests (JACKSON, 1978:206).

Kagbeni is mentioned only marginally in the historical textual sources.[6] The place referred to in them is in every case obviously old Kak (Kak Nyingba), the ruins of whose houses still stand, clearly visible, on a low river terrace of the Kali Gandaki approximately 2 km south of present-day Kagbeni. On the basis of remarks in the texts, one may assume that Kak Nyingba must have

existed at the time of these events, namely in the middle of the 12th century.[7]

In the orally transmitted stories, according to RAMBLE (1983:276ff.) and KRETSCHMAR (1985), there is likewise mention of a Yangton Lama who searched for Rong-Togme-Shigpo-Lama and who finally found him in Lo. The latter revealed to Yangton Lama that he, Yangton, was the only person in a position to subdue a demon that was devastating the villages in Baragaon. In the oral tradition, in contrast to the written sources, a change of bodies occurs, with the aged Rong-Togme-Shigpo-Lama assuming the youthful body of Yangton Lama.[8] Regardless of this, however, both of the narratives recorded by RAMBLE and KRETSCHMAR tell of demons and "man-eaters" and of how the demons' destructive activities were put a halt to by the spiritual powers of Yangton Lama. Kak is mentioned in them only in passing, but it is described as having already been destroyed, the abandonment of the village being ascribed to the voracity of the demons.[9]

> According to KRETSCHMAR (1985), Yangton Lama passed through the ruined village of Kak and met up with the demon in the still uninhabited and thickly forested region of Lubra. He forced the demon to renounce his eating of humans and promised him as compensation an offering of *torma* and *chang*. According to RAMBLE (1983:279), Yangton Lama arrived at the village of Kak, "which was at that time located about a mile south of the present village" and "was being plagued by a pair of demons (*srin-po*), who would capture and devour its inhabitants at every opportunity. The fact that the village was abandoned is attributed to their voracity."

The great similarity in names and the account of very similar events suggests that the story told by Dorje Thakuri is a local variant of the well-known legend of the founding of the Bon monastery of Lubra by the so-called Yangton Lama. What is new is the fact that not only Kak Nyingba but also Phudzeling is said to have been destroyed by demons, and that the surviving inhabitants of both settlements apparently founded present-day Kagbeni. The abandonment of the two settlements is also told of in the narratives of other, older villagers. The mother of Pema Gurung, moreover, gave an interesting explanation of the meaning of the village name of Kak: *bkag* or *skags* means in Tibetan 'to stop', the connotation being to stop the demons.

One can only speculate at present about the true motives for the abandonment of Phudzeling and Kak Nyingba. It is perhaps significant that the mystifying story of Dorje Thakuri was recounted in connection with a report about natural hazards (floods caused by the outburst of a glacier lake). What is beyond doubt, in any case, is that both Phudzeling and Kak Nyingba were laid out in areas of the river terraces at risk from erosion, namely the edges that were subject to crumbling, and that parts of both settlements are now washed away. In the case of Kak Nyingba, all of its fields are said to have been swept away by the Kali Gandaki. What is striking in Kak Nyingba, though, is the fact that the house ruins still standing along the terrace edges exhibit clear traces of fire. Numerous remains of charred beams as well as distinct burnt layers have been attested to in soil profiles taken during the last field trip. Another reason for the abandonment of the settlement that almost suggests itself is the outbreak of an epidemic (consumption of human flesh!).

This is by no means certain, however; it is known,

in the case of Phudzeling, for example, only that the idea of returning to the settlement and resuming the cultivation of its fields is rejected by the present-day population of Kagbeni on grounds that the region is haunted by evil spirits. Herdsmen with their animals are the only people to venture temporarily into it. It may be taken as probable, however, that Phudzeling and Kak Nyingba have some connection with present-day Kagbeni, as both areas are administratively part of Kagbeni, and questions of their use are settled in Kagbeni.

Again, up to now, the only information about when the settlement was abandoned has been vague. To judge by the textual sources, there are reasons to believe that old Kak must have still been in existence during the lifetime of the so-called Yangton Lama, which fell within the 12th century. If one can believe the orally transmitted narratives, Kak Nyingba had already been destroyed by the time the *gompa* was founded in Lubra. There is no mention of present-day Kagbeni in any of the sources dealing with this period available up to now, and this suggests that it arose at a later point in time.

Interesting results can be expected from the archaeological excavations with regard to the time during which Phudzeling was inhabited. Preliminary datings of settlement material have already been obtained by A. SIMONS (forthcoming), and they span the period from 300 B.C. to 1650 A.D. Own samples of earthenware fragments from house walls in Phudzeling were dated by means of thermoluminescence dating (TL dating) to the 14th and 15th centuries (date of the conflagration: A.D. 1331 ± 111; A.D. 1403 ± 68; A.D. 1413 ± 95; A.D. 1453 ± 63).[10] Samples for dating (14C, TL, dendrochronology) were likewise taken in Kak Nyingba during the last field trip, but there are as yet no results.

The caves of Sapce Dak, built into quaternary conglomerates, may perhaps be one of the oldest settlement-related elements on the land use map of Kagbeni. Nowadays inaccessible, they are framed by solid bedrock of cretaceous age on the orographically right side of the Kali Gandaki valley, opposite Kagbeni at an elevation of about 2860 m. Two *chorten* are observable in them from afar. The question arises as to whether this row of approximately 15 caves are affiliated with the larger cave systems of Phudzeling and Mebrak in the upper Dzong Chu valley, which were obviously used as dwellings, and with the more extended cave systems of the Kali Gandaki valley in adjoining areas to the north and south. The caves of Sapce Dak were hardly likely to have been convenient dwellings, given the steepness of the slope and their exposure to the wind. Their strategically favourable location is unmistakable, however. One has a wide view not only over the Kali Gandaki valley to the north and the south but also over the Dzong Chu valley. If their use as dwellings, on a site that affords little opportunity for carrying out improvements, appears to be very improbable, then they may have been formerly used for surveillance or scouting purposes, and possibly later for religious purposes. At present, however, one can again only speculate and wait for the systematic excavations to provide a clear answer. Nowadays access to the caves is greatly hampered by rolling stones, and the use of them as retreats impossible. Two caves on the northern slope above Kagbeni (Simbu Phu), alongside which a meditation hut has been built, at present serve this purpose.

Likewise still uncertain is the age of the ruins of Thana, located on the higher lying river terrace (D) above Nilgiri Lodge, and the purpose they once served. Only the remains of a large building have survived to the present day: a foundation of stone fragments on top of which a wall of pressed

clay (*gyang*) was erected. According to elder villagers, however, a settlement once existed there. The remains of numerous foundation walls that at present appear above the surface of abandoned fields suggest that this is the case. According to Pema Gurung, the land of Thana was once owned by the (royal) Rhewo family. He himself bought a number of fields from them and later sold them to the Wind Power Project, after the land proved to be agriculturally unproductive. All attempts to cultivate it failed, principally because the irrigation of the fields repeatedly caused them to subside, as a result of which the foundation walls of houses and numerous shards and bone fragments were uncovered. During excavation work for Nilgiri Lodge the construction workers are said to have come across extensive bone and shard material as well. Of particular note in this connection are the remains of a *mane* wall that directly abuts on Nilgiri Lodge to the south. The wall purportedly once stood in Thana but was moved downhill, having faced collapse at its former location at the edge of a terrace; moreover, people disliked taking the long and steep path up to Thana to perform their daily ritual circumambulations. The *mane* wall has since been relocated a second time, up to the middle of the main route to Kagbeni, where it presently, together with a *chorten*, marks the southern boundary of the village.

In the opinion of elder villagers of Kagbeni, Thana was founded before the founding of present-day Kagbeni, and after Kak Nyingba and Phudzeling had been abandoned. There is the statement of an old man from Tiri that Thana was formerly a military garrison. "Thana" in Nepali means "police post", thus, according to Pema Gurung, a fortress (*dzong*) may have at one time stood there; the exposed topography of the site favours this assumption. Interesting conclusions on the former use of Thana may be expected from Tibetological research (D. SCHUH, C. RAMBLE) following the edition of the *bem-chag*. Dating samples collected from the ruins of the house in Thana during the last field sojourn are currently being analysed.

The first reliable information concerning political events and construction activities in Kagbeni has come from the studies of D. SCHUH and colleagues. It dates to the Tibetan medieval period, the time of the founding of the fortresses. Written sources reveal that the palace of Kagbeni, now in ruins, was built in the middle of the 15th century by a Tibetan noble family (SCHUH, 1990, 1992). The palace continues to give Kagbeni the look of a settlement that at one time was the center of feudal power. But whether the settlement and palace arose simultaneously or whether the settlement site was being used even earlier is as yet little known. Up to now there are indications only of the age of the palace, dated dendrochronologically by SCHMIDT (1992-93:32) to 1558, as well as that of individual houses, none of which, with one exception until now, matches the date of the palace. There is, moreover, a discrepancy between the earliest possible dates that supporting beams from the palace could have been felled, determined dendrochronologically, and the information provided by historical documents regarding the construction of the palace. The difference, some 100 years, may be due to a number of reasons, concerning which one need not at present speculate. One should wait for the results of further dating and the architectural-historical interpretations of B. SCHMIDT and N. GUTSCHOW, who gathered extensive samples in Kagbeni that can be analysed dendrochronologically.

3.3.2 The layout and physiognomy of the settlement

If one looks at the physiognomy of the village and the form that house lots take, then a number of principles governing layout may be discerned, and therewith various phases in the development of the settlement. Four sections of the village may be distinguished in its present-day being on the basis of the shape, size and arrangement of house lots.

The center of the village (Kak Nang), situated on the northern fan plain region (A) and abutting directly on the steep slope of the river terrace of the Kali Gandaki, forms the oldest part of the village. The most striking features of it are that its houses have irregular ground plans, are constructed so as to impinge on and even vertically overlap one another, and that they form semicircular groups around an open space (Te). Even the palace building (Khar) is oriented around the open space, though it was erected on the other side of it, opposite the settlement. The old core of the village is delimited by narrow alleys and tunnel-like passageways (Te Hrangtang, Hrangtang Munakpa). The buildings adjoining at present to the north, east and south are likely to be more recent since their placement, in contrast to the nested manner of construction in the center of the village, is regular and oriented parallel to the pathway through the village (Phi Hrangtang), particularly in the northern and eastern sections. The statement, by one of the descendants of the royal family, that there were formerly no houses situated around the palace, such houses have been erected later, confirms this assumption. Today numerous buildings of the old center of the village have been abandoned, some have visibly decayed, and still others have been swept away through erosion along the river terrace of the Kali Gandaki. Some houses, standing directly on the edges of the river terrace, are highly at risk to the forces of erosion and for this reason are no longer inhabited. The palace itself likewise lies in ruins. This came about not because of military conflicts but rather as a result of gradual decay (SCHUH, 1992) as well as, according to Dorje Thakuri, an earthquake.

The parts of Kagbeni that adjoin the old center to the north and east are of more recent origin, as their houses are situated in regular fashion along both sides of the pathway, thus adhering to the scheme manifested by linear settlements like "street villages". Of the two, the eastern sector (Angyn), in which the Red House Lodge is located, represents the older part of the settlement. Thus construction timber taken from the Red House Lodge could be dated by SCHMIDT (1992-93:30) to 1653 as the year of felling. The houses that were built along the pathway on both sides of the *mane* wall in the northern sector of the settlement (Kak Phi) are of relatively recent age. In part they are newly erected administrative buildings (post office, production credit office for rural women), built only approximately ten and six years ago. The *mane* wall, a characteristic feature of villages settled by Tibetan groups, has been completely integrated into the village scheme today. Its original location, however, lay outside the village. It is evident that the particular topography of the fan plain has determined the course of the settlement's recent expansion. Above all it has been the riverbeds from the Kali Gandaki and Dzong Chu that set limits to growth: the settlement could only expand out over irrigated fields.

One of the most recent phases of expansion is the settlement of the southern area of the fan plain (C). According to local informants, the old

customs post (Kakdeni; giving another connotation to the meaning of Kak) together with a storehouse was once located there, facing the big *chorten,* but no other buildings beyond these. New buildings have been added only during the past 15 years. They are again oriented, in their placement, to the main pathway. Only public buildings (school, children's clinic, shelter for pilgrims) deviate from the norm established by the pathway through the village. The large number of public buildings and buildings serving other than only dwelling purposes, are a characteristic feature of the new section of the village, whereas in the old center there are, with the exception of the palace, only houses and farm buildings.

The various developmental phases of the village of Kagbeni can be deduced not only on the basis of its physiognomic settlement structure but also on that of the architectural form of its houses. Whereas the houses in the center of the village display an irregular ground plan, are located compactly one against another and stacked one over another up to four storeys tall, the new houses along the pathway have a rectangular ground plan for the most part and are usually two storeys in height. Domestic and utility areas that in the old village center were ensured by constructing in multiple storeys are now obtained by a more spacious layout. If, due to lack of space, the houses in the center of the village are largely planned without courtyards, the architectural style and house type exemplified by Thakali houses with their large courtyards (cf. KLEINERT, 1983) predominate in the northern, more recent settlement area. Some of these buildings (the present-day health post, police check post) were built as late as the 1960s by Khampas, who established a supply point in Kagbeni.

In this context, it is noteworthy that the surveyors of the H.M.G. Survey Department, in dividing up the settlement into wards, evidently took their bearings from the structure of the ground plans: the present-day ward boundaries coincide exactly with the settlement areas described above.

While a number of expansionary phases can be seen, on the basis of a physiognomic study of settlement structure, to have occurred within the village, a more exact analysis is required to date them absolutely. Dendrochronological datings or other scientific dating techniques, a study of the architectonic and historical features of buildings, and information gleaned from historical textual sources may advance this undertaking. What one local informant said should not go unheeded in this connection. He pointed out that the walls of houses were traditionally built of pressed clay (*gyang*), whereas clay bricks, commonly in use for house construction in large parts of Tibet, have almost totally gained the upper hand in later times. Since clay bricks are apparently less durable, however, people in Kagbeni have now reverted to constructing methods employing pressed clay. Building shape and materials in themselves, then, are a further indication of the relative ages of settlement areas.

If finally a comparison is made between the present number of households (1981 = 53 HH, 1993 = 65 HH) with data from the last centuries (60 HH, cf. SCHUH, 1992; RAMBLE, forthcoming), then it is interesting to note that, despite phases of village expansion, on the whole no noteworthy increase in population has occurred. The low number of households in the year 1981 is due to the migration of families involved in distant trading ventures (Nagaland). The almost invariant number of households over a period of centuries may be ascribed to the *trongba* system formerly practised in Kagbeni, that is, to the

former polyandrous social structure (cf. SCHULER, 1987), under which new households were kept from being formed, at least not in the same village.

4. Summary

It is obvious that the present state of knowledge concerning the origins of Kagbeni and other settlements in Mustang District is still very fragmentary after only two years of field research, being scarcely more than an inventory of facts; indeed, all the more unanswered questions have arisen. Even if nothing definitive can as yet be said about the chronological status of abandoned settlement sites, their former function or their historical significance, nevertheless the multiplicity and spatial concentration of abandoned settlement sites, particularly in Baragaon, may be highlighted as one important finding (cf. HAFFNER & POHLE, in the present volume). Even in such a spatially restricted area (ca. 1.6 km x 1.1 km) as is documented on the land use map of Kagbeni, no less than six different types of abandoned sites can be found: anthropogenic caves, an abandoned village site, the palace remains, abandoned fields, numerous house ruins and the remains of religious structures. Furthermore, two other abandoned villages, Phudzeling and Kak Nyingba, though outside the area covered by the map, are directly connected with present-day Kagbeni. This concentration of phenomena associated with abandoned sites suggests that the region has had an extremely dynamic settlement history, one marked by the decline and the recurring founding of settlements, and more particularly by a frequent shifting of settlement sites. Explanatory models based on one simple cause - this much may be said already - will not sufficiently capture the complex history and dynamics of settlement processes.

Ecological factors may been held responsible for many features of settlement change. Topographical conditions are decisive above all else in the choice of settlement sites, with the availability of irrigation water for village fields being an unvarying criterion when that choice is made in arid regions. The shapes of houses and the layout of settlements can be interpreted, to a certain extent at least, as adaptational strategies in dealing with dry climates marked by strong valley winds. A compact, closed village layout with the construction of flat-roof houses is dominant. Further, each political, economic and religious epoch has left its own distinct stamp on the face of the settlement. Thus the effects of the consolidation of Tibetan culture is recognized on specific buildings and monuments, such as those of the palace of Kagbeni. Moreover, numerous structural features of a religious nature have left their mark on the settlement and make clear that it fell within the sphere of Buddhist influence. The spacious houses laid out around courtyards in the Thakali style constitute the chief legacy from the period of the *subbas* and Khampas. The influence of the contemporary nation-state is felt in the numerous "functional buildings" (school, health post, police check post etc.). The numerous lodges and shops are an immediate outgrowth of the relative upturn in the economy that Kagbeni has experienced over the past ten years due to tourism.

Despite the dynamics of settlement processes, however, specific settlement features have also been preserved over periods of hundreds of years. Principles governing the choice of sites, the use of locally available building material, and religious and cultural formative features have obviously remained constant throughout extended periods of time and have determined the face of the -

largely unified - cultural landscape of the dry inner valleys of the High Himalayas.

A similar constancy may be observed in the structural features relating to agriculture. It is noteworthy, for example, that presumably the same crops are sown today as were during the period of the use of the caves. The chief cultivable products in Baragaon are still three types of barley, two of buckwheat and one of wheat (cf. SIMONS, 1992-93). Nor are the irrigation systems likely to have altered in any fundamental way over the years, having continued to rely principally on gravitational flow. The laying out of irrigated terraces and the intensive use of fertilizer in tilling are further characteristics of the agricultural tradition. Thus recourse may be had to current land use structures in order to explain historical forms and systems of cropping; the former represent, in fact, an immediate precondition for an understanding of the latter.

Notes

1. The article was translated from the German text into English by Philip Pierce. The toponyms and other local terms were transcribed by Roland Bielmeier.

2. The climatological data were calculated from the "Climatological Records of Nepal", published by "His Majesty's Government of Nepal (H.M.G.)" in 1977, 1982, 1984, 1986, Kathmandu.

3. According to FÜRER-HAIMENDORF (1975: 168) the system of self-contained villages and with that the trongba system, broke down wherever in Baragaon Thakali merchants developed an economic stranglehold over Bhotia villages. In fact, however, the trongba system still existed in several villages of Baragaon much longer and could even be surveyed by SCHULER (1987) during her investigation in 1976. In Kagbeni it was said by local informants that the trongba system was only recently given up, about three years ago.

4. The data were obtained from: H.M.G., Department of Tourism, 1984: Nepal Tourism Statistics 1983, p.43, Kathmandu; JHA, P.K., 1992: Environment & Man in Nepal. Know Nepal Series, No. 5, p. 70 Kathmandu.

5. H.M.G., Central Bureau of Statistics, 1981: Statistical Year Book of Nepal 1991, 3. ed., Kathmandu.

6. The texts analysed by JACKSON (1978) are: dPal-ldan-tshul-khrims (1904-1972): Sangs rgyas g.yung drung bon gyi bstan-pa'i byung ba brjod pa'i legs bshad bskal pa bzang po'i mgrin rgyan, Dolanji (H.P.), Tibetan Bonpo Monastic Center; and Tenzing Namdak (ed.), 1972: Sources for a History of Bon, Dolanji (H.P.), Tibetan Bonpo Monastic Center. Both texts were also utilized by RAMBLE (1983) and supplemented by another text he discovered in Lubra: "... the lineage history of the clan of the Yang-ngal priests." (Yang-ngal gdung rabs, RAMBLE, 1983:270)

7. In JACKSON (1978:205) the following is noted: "In nearby Kag an old childless couple divided up their possessions and offered them to two local priests ...". In RAMBLE (1983:275) one reads: "Trashi Gyaltsen went riding on a mare which had a foal. His patrons in Kag (near Lubra) saw him off on the plateau ..."

8. In KRETSCHMAR (1985) the change of bodies is reversed, with the aged Yangton Lama assuming the body of the youthful Rong-Togme-Shigpo-Lama.

9. The textual sources tell of both demons and snake deities living in the valley of Lubra. In Dorje Thakuri's narrative there is an account of a demon with the head of a lion and the body of a snake. Snakes as earth and water deities symbolize in ideal terms such natural events as floods or mud flows.

10. The TL dating was carried out by Dr. Irmtrud B. Wagner at the "Forschungsstelle Archäometrie der Heidelberger Akademie der Wissenschaften am Max-Planck-Institut für Kernphysik".

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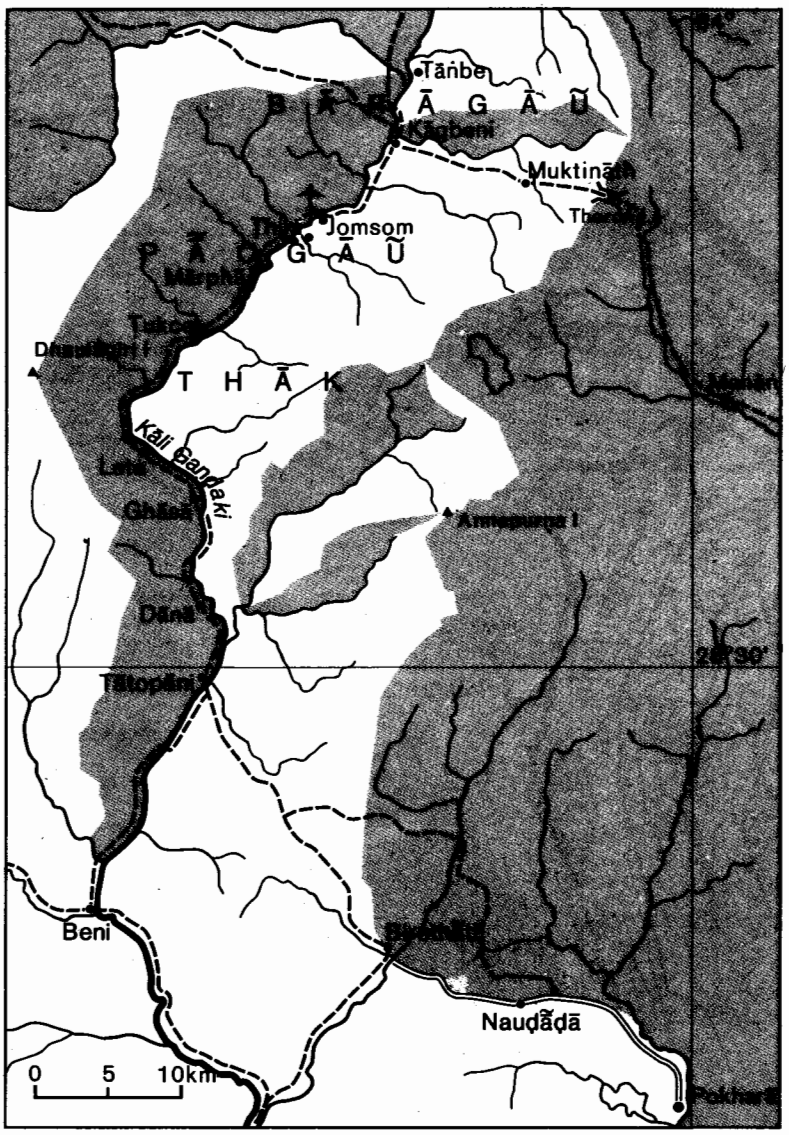


------ Trekking Route

Fig. 1: The location of Kāgbeni in the Kāli Gaṇḍaki Valley

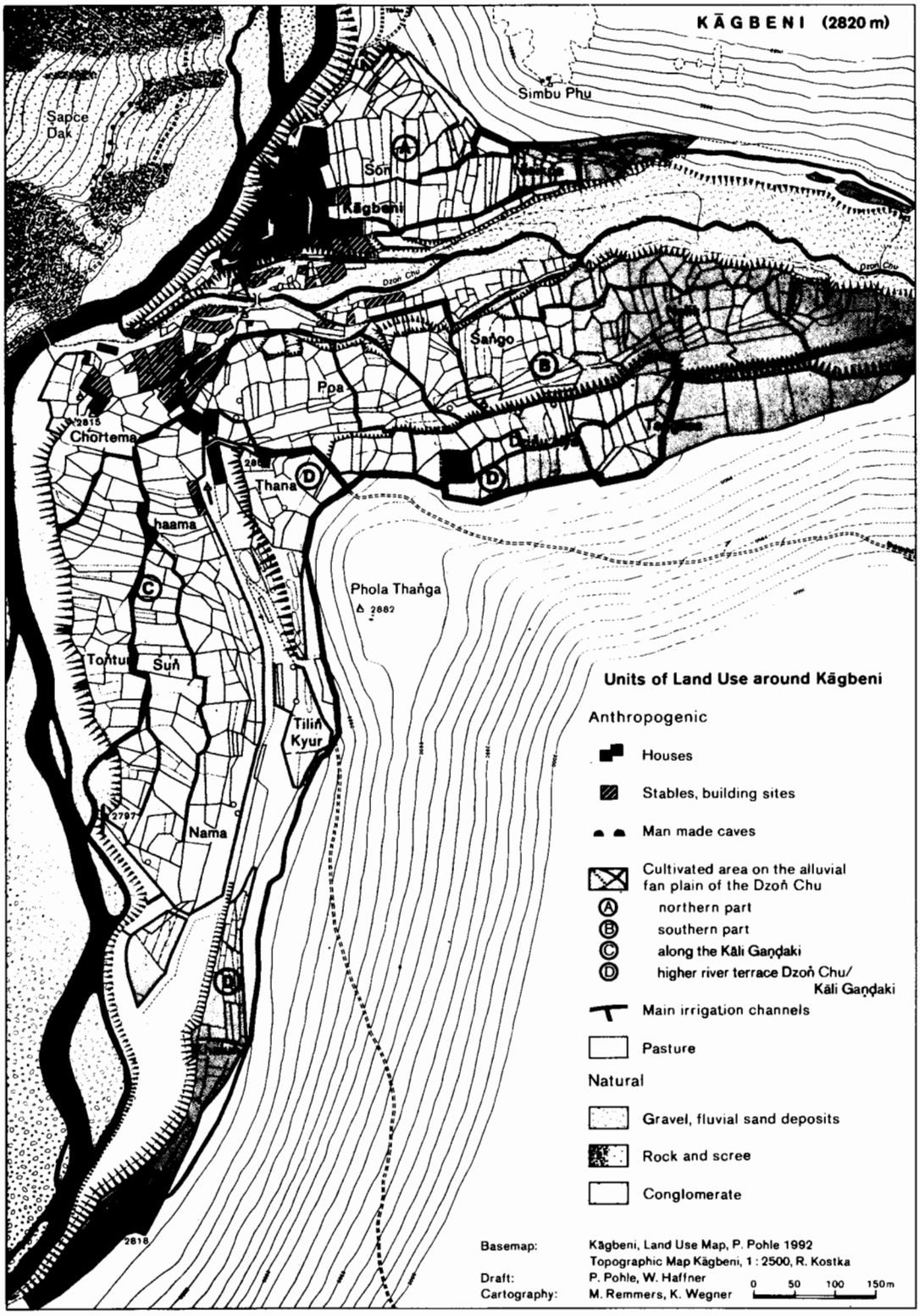


Fig. 2: Units of Land Use around Kāgbeni (2820 m)

Tab. 1: The population of the permanent settlements of the Kagbeni "Village Panchayat" according to the census of 1981[1]

Settlement[2]	Ward No. [2]	Population	Male	Female	Household	Pers./Household
Sangda	1	83	42	41	16	5,2
Dankardzong	2/3	204	85	119	47	4,3
Phalak	4/5	189	80	109	42	4,5
Pagling	6	124	66	58	26	4,8
Kagbeni	7/8	239	114	125	53	4,5
Tiri	9	111	57	54	25	4,4
Kagbeni Panchayat	1-9	950	444	506	209	4,5

1 CENTRAL BUREAU OF STATISTICS: Population Census 1981. Individual check list. (Data unpublished, copied by the author 1983, Kathmandu)
2 District Gaon Samiti Office, Jomsom 1991

Tab. 2: The harvest yields in Kagbeni (2.820 m)

Amount of seed	Harvest yields	Harvest classification
1 pathi barley	13-14 pathi	average
	18 pathi	maximum
	10 pathi	minimum
1 pathi buckwheat	6-7 pathi	average
	10 pathi	maximum
1 pathi potatoes	3-4 pathi	average
	5 pathi	maximum
	2 pathi	minimum
1 pathi maize	40 pathi	average
	50 pathi	maximum
	30 pathi	minimum

Survey 1991, 1 pathi = 4.5 litre

Cartographic Activities in the Mustang District

Prof. Dr. - Robert Kostka
Cartographer

Abstract

In the framework of this space-related research programme there is a general need to prepare thematic maps with different informational content and in a wide range of scales .

For Mustang district it was necessary to produce maps at the scales of 1:200 000 and 1:50 000 using space-borne LANDSAT images and existing sheets of the one inch map of Nepal. To prepare larger scale maps, e.g. 1:10 000 and 1:2500, Hasselblad aerial images taken with a fisheye lens as well as results of terrestrial-photogrammetric and geodetic fieldwork were used.

Only by combining all available cartographic sources with low-cost geodetic-photogrammetric work an economical solution of the task, defined as the preparation of thematic maps for this research project in the Himalaya, is attainable.

1. Introduction

Geographical, historical , archaeological and other specialized fields of study are represented in the present research programme in the Himalaya. For the space-related scientific investigations a lot of cartographic work has to be done.

The task of the cartographer in the framework of this research programme is not to produce topographic maps of a whole district. The final goal is to prepare thematic maps for different areas of interest containing only special research-related information.

To attain this goal, there have first to be produced study maps for fieldwork and later on base maps to localize the thematic items and to present the results of the research work in a visual way. The scale and contents of such maps need to be selected carefully, with the objectives of the clearly in mind research theme. To reach

this goal economically, it is necessary to make use of all available sources.

At present the studies of the Nepal-German project are concentrating on Mustang district in northern Nepal, especially in the southern part of this region. Interest is focused on buildings, settlements and cultivated areas in use at present but also on deserted tracts as witnesses of the past along the south-to-north traffic routes between India and Tibet. Of special interest, furthermore, is the Muktinath valley with its holy places and a tradition dating back several thousand years.

In the following chapters a short sketch is given of the different cartographic activities involved in preparing study and base maps for this part of the Himalaya.

2. Medium scale maps

Mustang district, an area of about 3600 km² is located in the upper reaches of the Kali Gandaki River and represents an arid high mountain area (fig. 1) with important roads (paths) and passes to the surrounding regions of Tibet, Manang and Dolpo. It is covered by 10 sheets of the one inch map of Nepal (GURUNG 1981).

This map programme, covering the whole of Nepal and now available at a scale of 1:50 000, is considered to be the basic information source for all further mapping activities. Geographic and grid coordinates as well as heights are referred to these sheets cartometrically, but all values given in yards and feet were transformed into the metric system.

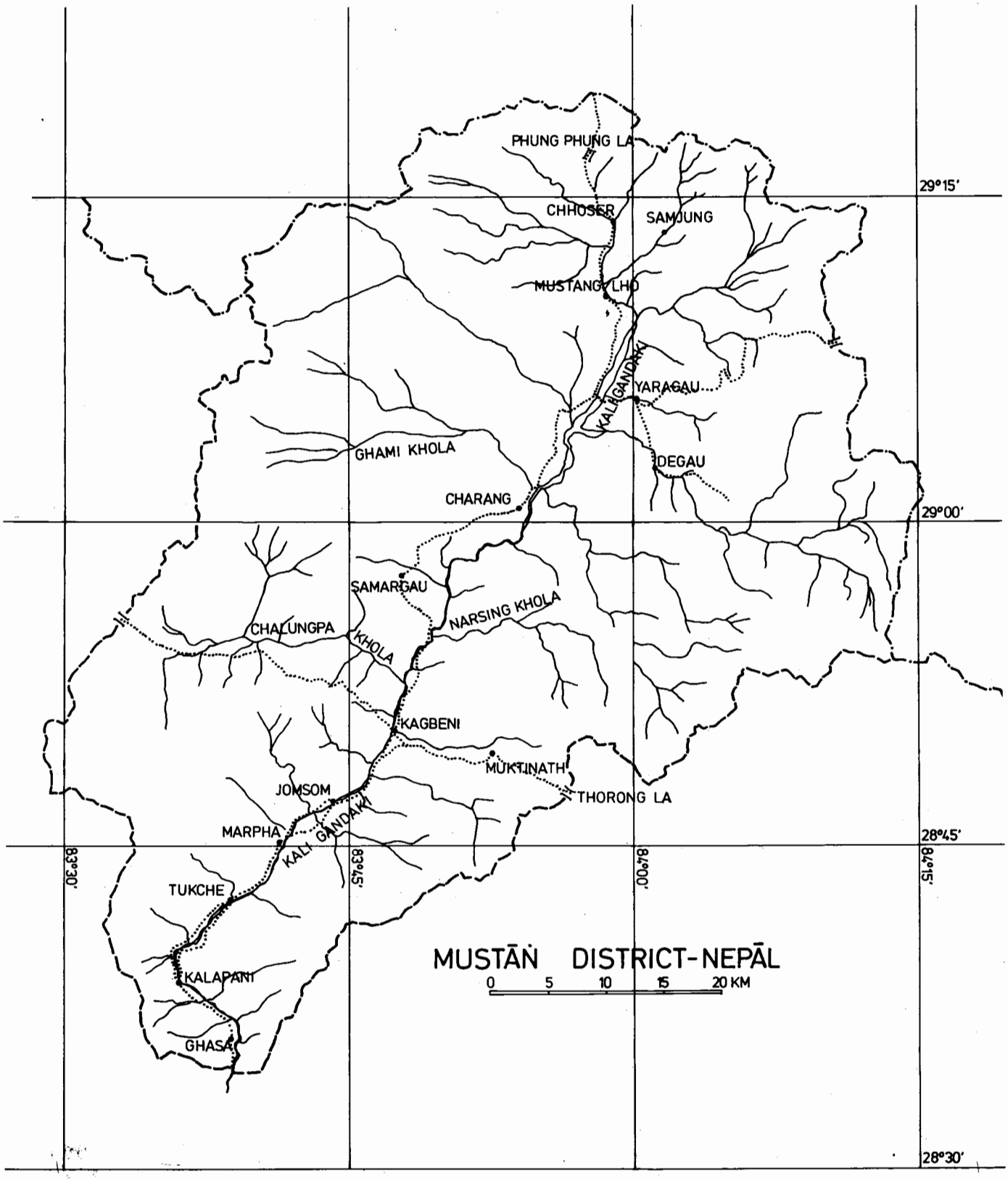
Based on these sources, different maps were produced using all available and economically justified basic material, such as map sheets or space-borne images.

For the representation of the whole of Mustang district, a map scale of 1.200 000 was chosen. The informational content of the previously mentioned sheets of the one inch map proved unsuitable; too many details in situation and relief are shown on these maps. Thus a special map, the Mustang District Satellite Image Working Map was prepared. Its informational content consists of the black and white image of a LANDSAT MSS scene combined with the digitized irrigation pattern of the land utilization map of Nepal at its original scale of 1:50 000. The satellite image map is a study or work map and does not show greater detail. Completing the information content is the task of specialists in the different fields of research.

To carry out detailed studies in the Kali Gandaki valley or in the densely settled areas of the Muktinath valley, the informational content and the scale of the previously mentioned map is not sufficient. Nor are the sheets of the one inch map, available only as blueprints, suitable as a base for the intended research studies without revision. Thus with the help of Russian KATE 200 photos and a Westeuropean SPOT satellite image, a study map was prepared (fig. 2) combining these data with transformed information derived from the sheets of the one inch map.

The information content of this map is limited to the irrigation pattern and a few additional elements of the ground plan. It is therefore possible to upgrade the information further with data derived from space-borne images or the

Figure 1: Mustang district in northern Nepal with the upper reaches of the Kali Gandaki River and the holy place of Muktinath.


PHUNG PHUNG LA
29°15'
CHHOSER
SAMJUNG
MUSTANG LHO
KALIGANDAKI
YARAGAU
GHAMI KHOLA
DEGAU
CHARANG
29°00'
SAMARGAU
NARSING KHOLA
CHALUNGPA
KHOLA
KAGBENI
MUKTINATH
JOMSOM
THORONG LA
MARPHA
KALI GANDAKI
28°45'
83°30'
83°45'
84°00'
84°15'
TUKCHE
KALAPANI
GHASA
MUSTĀN DISTRICT-NEPĀL
0 5 10 15 20 KM
28°30'

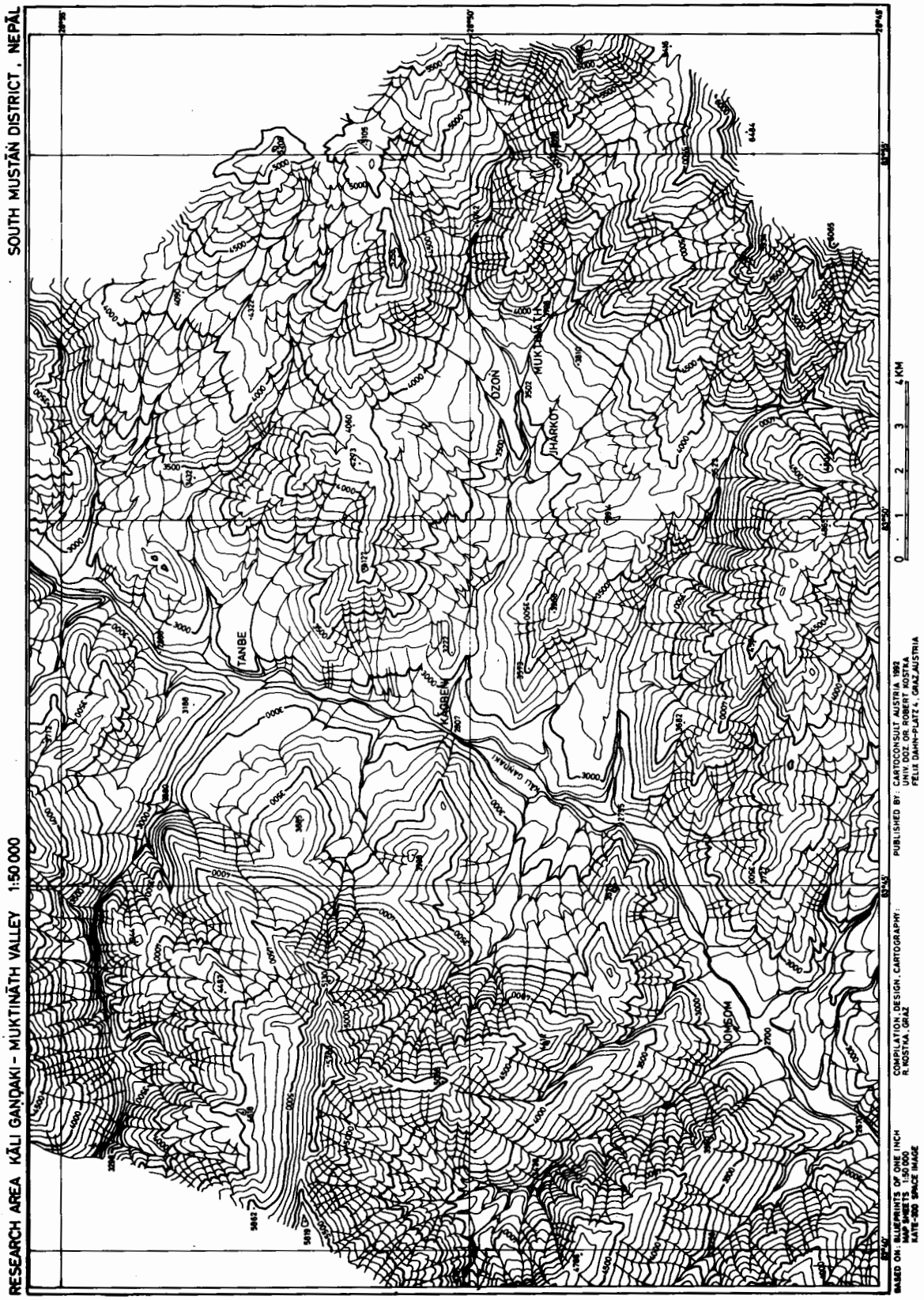


Figure 2: Research area Kali Gandaki - Muktinath Valley 1:50 000, derived from the sheets of the one inch map and satellite images (reduction).

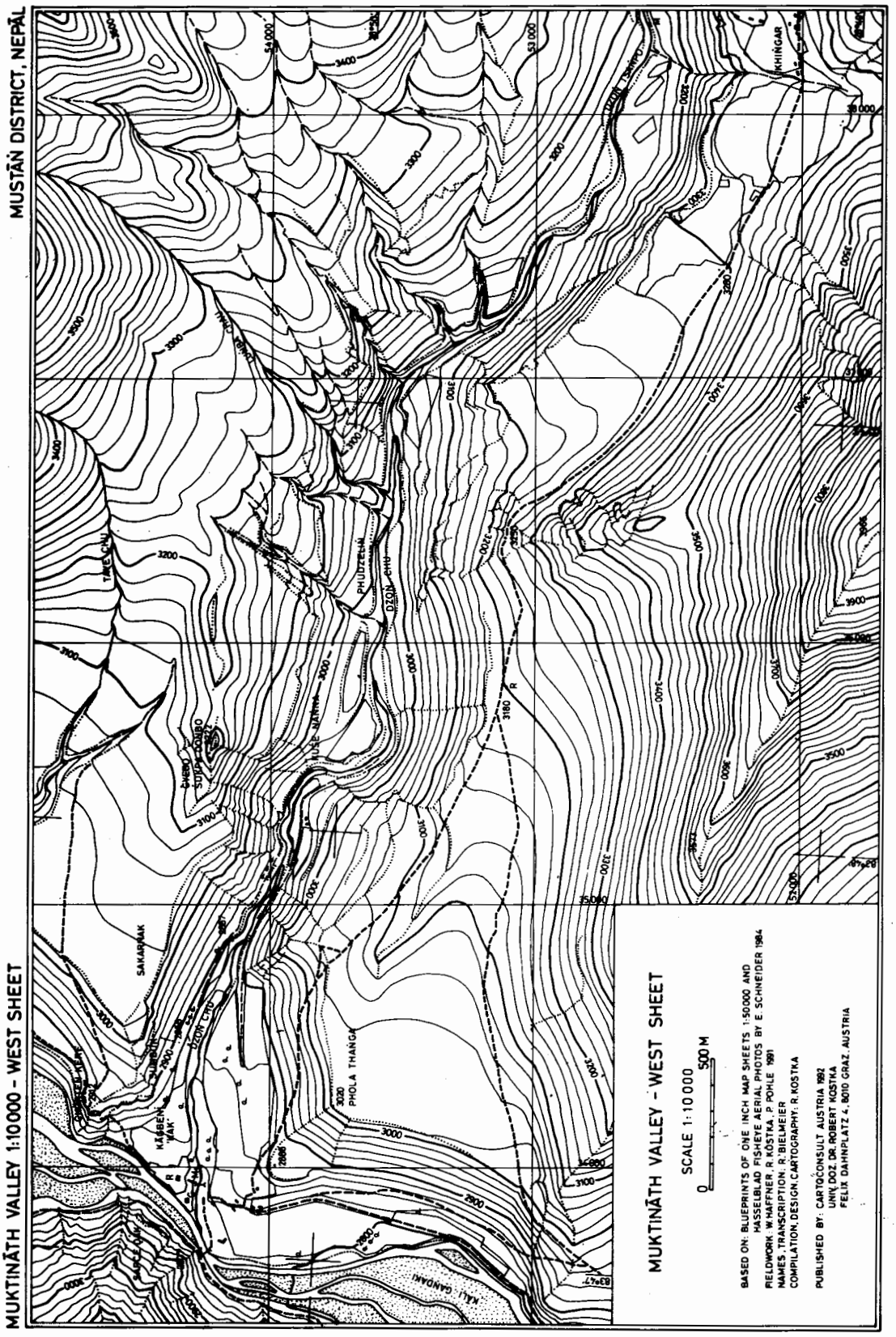

MUSTĀN DISTRICT, NEPĀL
MUKTINĀTH VALLEY 1:10000 - WEST SHEET
MUKTINĀTH VALLEY - WEST SHEET
SCALE 1:10 000
0 500 M
BASED ON: BLUEPRINTS OF ONE INCH MAP SHEETS 1:50000 AND HASSELBLAD FISHEYE AERIAL PHOTOS BY E. SCHNEIDER 1984
FIELDWORK: W. HAFFNER, R. KOSTKA, P. POHLE 1991
NAMES, TRANSCRIPTION, R. BIELMEIER
COMPILATION, DESIGN, CARTOGRAPHY: R. KOSTKA
PUBLISHED BY: CARTOCONSULT AUSTRIA 1992
UNIV. DOZ. DR. ROBERT KOSTKA
FELIX DAHNPLATZ 4, 8010 GRAZ, AUSTRIA
KAGBENI
SAKARAAK
PHOLA THANGA
PHUTZEHN
DZONG CHU
KALI GANDAKI
KHINGAR

Figure 3: Muktinath valley, reduction of West sheet (original scale 1:10 000), showing the Kali Gandaki valley, the village of Kagbeni and the lower part of the Dzong river valley.

result of field studies. The relief representation is given through contour lines with an equidistance of 100 meters, derived from the one inch map. A generalization process was necessary, disregarding less important details in order to make the product - the base map for the results of the thematic studies - easily readable.

The generation of this map type is planned for the entire upper reaches of the Kali Gandaki River. Thus it should be easy to localize agricultural areas and settlements along with monasteries (still in use or abendoned), caves and other features accurately.

These maps in the range of scales from 1:200 000 to 1:50 000 were generated to serve the needs of a wide range of studies. They concern not only results derived from literature or existing map sources but also remote sensing data combined with the results of fieldwork.

For detailed studies, maps at larger scales are necessary.

3. Large-scale mapping

As a topographic base of information for studying detailed areas, neither existing map sheets nor available satellite images, as mentioned before, were sufficient. Thus it was necessary to use large-scale aerial photos, if available, or execute geodetic and/or terrestrial-photogrammetric fieldwork.

Besides the mapping of the whole Muktinath valley at a scale of 1:10 000, a large-scale mapping of the irrigated fields of the Kagbeni area was done. Furthermore the holy places of Muktinath and the cave ridge near Jharkot were mapped. Only the first two mentioned examples are described in the following paragraphs.

A special remote sensing technique was necessary to get a generalized map of the Muktinath valley (West- and East sheet at a scale of 1:10 000) using existing Hasselblad aerial images taken by E. Schneider with a fisheye lens in 1984. The huge distortion of the 6x6 cm^2 Hasselblad photos with the fisheye lens Distagon f 30 mm must be taken into account for a proper evaluation. This concerns not only the parameters of the inner orientation but also the technique of the photogrammetric plotting.

The informational content of the map sheets derived from these maps consists of details in the ground plan recognizable in the stereo images and the relief information through contour lines with an equidistance of 20 meters (fig. 3).

No further technical details are given here; reference is made to the literature (GRUBER and KOSTKA 1992). The goal in mentioning this map production process is rather to show that the technical possibilities depend on the individual problem and that,as a result of limiting conditions, individual solutions of the mapping process, especially in large-scale mapping are necessary.

To prepare the land use map of Kagbeni (reference may be made to P. Pohle in the same volume) the fisheye images were not sufficient. As a cartographic base for this land use mapping five sheets of land register map at a scale of 1:1250 were also used. As there are terraces and slopes bordering on the irrigated fields, terrestrial photogrammetric fieldwork had to be done to obtain topographical information. This work was executed in the year 1991 and the results reflect

the topographic situation in that year at a scale of 1:2500. The measurements for preparing the land register maps, however, were done in the year 1975, so this land use information had to be revised and brought up to date (see also P. Pohle, in the same volume). The combination of the thematic and topographic source maps was chosen especially with a view to help visualize the landscape-ecological situation of the settlements and the irrigated fields in the confluence area of the Dzong river with the Kali Gandaki. The information presented in this large-scale map other than topography and visible land use was the result of detailed field studies.

4. General remarks on the mapping processes

Except the last example, none of the maps mentioned above is a final product. They should serve for fieldwork purposes as basic information and also, in the framework of literature studies, as study or work maps.

To get the required results economically for the different tasks, it was necessary to use all available sources. In the case of the Mustang valley these were:

Maps: the one inch map, but also overview maps, the sheets of the land-utilization map or thematic maps;

Spaceborne images: as NASA-LANDSAT MSS scenes PRIRODA-KATE 200 photos in 3 spectral bands or a SPOT2-XS transparency /film for localizing the artifically irrigated fields.

With the help of all these sources the map preparation processes were executable economically, the only further methods being aerial photography with non-metric cameras, terrestrial photogrammetry and geodetic fieldwork.

By combining and selecting the suitable data and methods, the required study maps for the intended research work could be prepared. In future these maps ought to be used as basic information for the preparation of different thematic maps.

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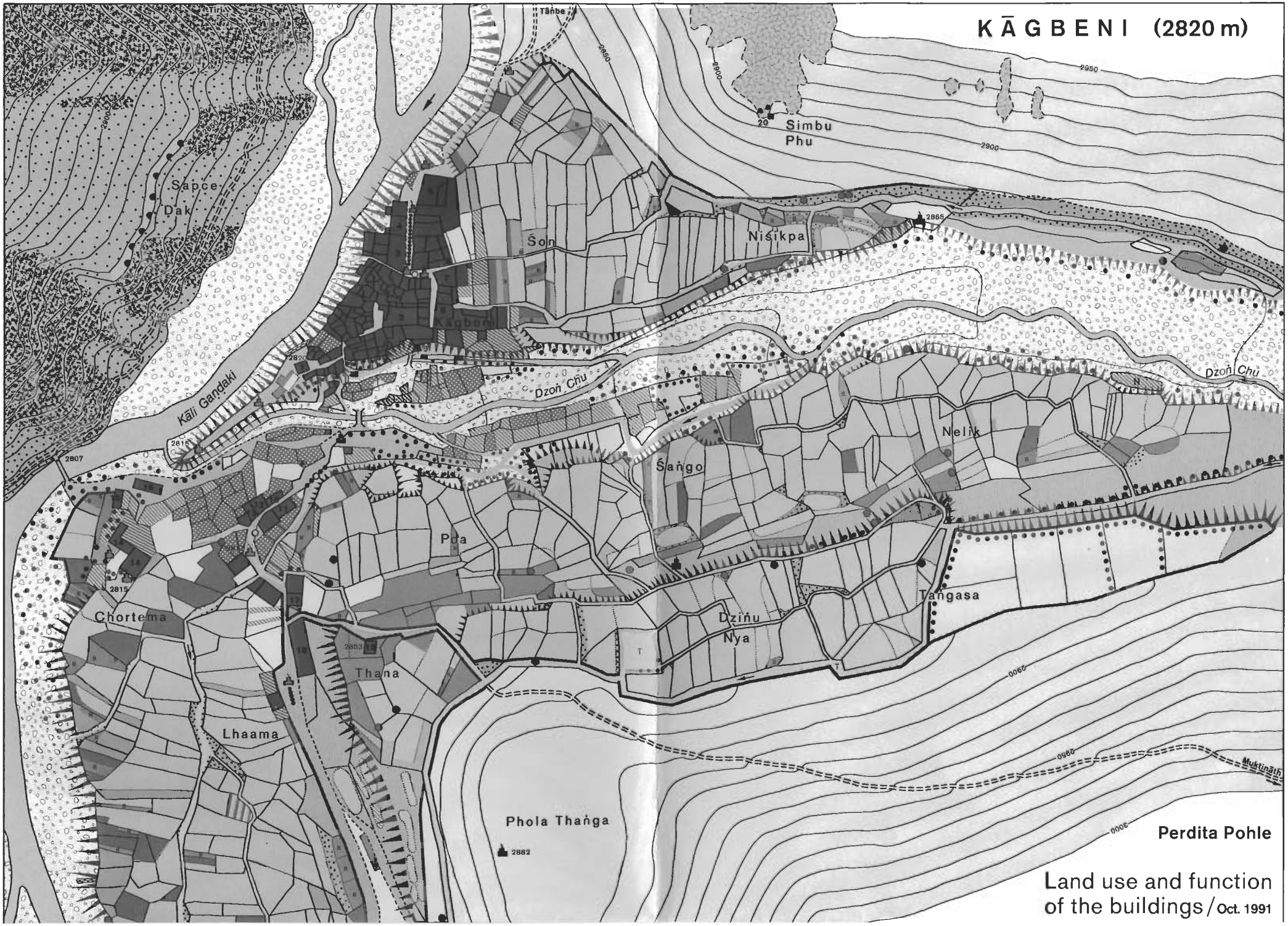
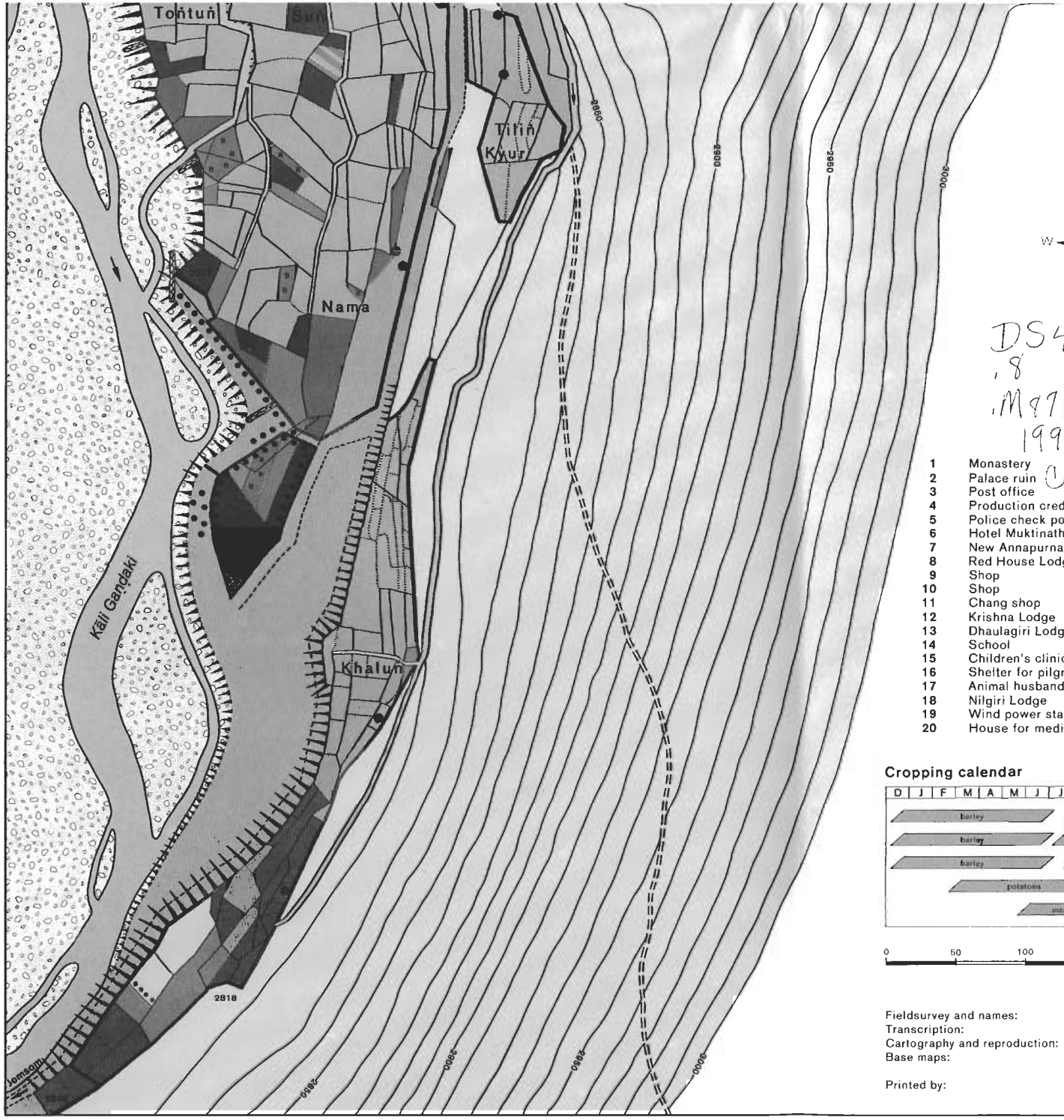
About the Authors

Mr. Khadga Man Shrestha	Director General Department of Archaeology Chief Editor, Ancient Nepal
Dr. Hans G. Hüttel	Archaeologist German Archaeology Institute Bonn, Germany
Prof. Dr. Angela von den Driesch	Veterinary - Archaeology University Munich Germany
Dr. Franz -Karl Ehardard	Tibetologist University of Hamburg Germany
Prof. Dr. Willibald Haffner	Geographer University of Giessen Germany
Prof. Perdita Pohle	Geographer University of Giessen Germany
Prof. Dr. Robert Kostk	Cartographer Geodesist University of Graz Austria


KĀGBENI (2820 m)
Tāṅbe
Simbu Phu
Sapce Dak
Śon
Nisikpa
Kāgbeni
Dzoṅ Chu
Kāli Gaṇḍaki
Nelik
Śaṅgo
Pda
Tangasa
Dzinu Nya
Chortema
Thana
Lhaama
Phola Thaṅga
Muktināth
Perdita Pohle
Land use and function of the buildings / Oct. 1991



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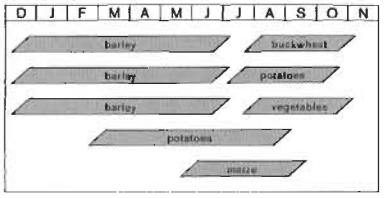
Copy 1

1 Monastery
2 Palace ruin
3 Post office
4 Production credit for rural women
5 Police check post
6 Hotel Muktinath View
7 New Annapurna Lodge & Shop
8 Red House Lodge
9 Shop
10 Shop
11 Chang shop
12 Krishna Lodge
13 Dhaulagiri Lodge & Restaurant, shop
14 School
15 Children's clinic
16 Shelter for pilgrims
17 Animal husbandry breeding
18 Nilgiri Lodge
19 Wind power station
20 House for meditation

Cropping calendar



0 50 100 150 200 m

Irrigated fields
- Buckwheat
- Maize
- Potatoes
- Vegetables
  - B Beans
  - R Radish
  - S Spinach
- Fruits (apples, apricots)
- Fruit and vegetable garden
- N Nursery
- Grassland

- Pasture
- Abandoned field
- Waste land
- Solitary tree (willow,poplar, juniper)
- Tree plantation (willows, poplars)
- Scrub *(Rosa sericea)*

- Land tenure plots
- Land use plots
- Wall enclosing the fields

- Irrigation channel
- T Tank
- Watertap
- Edge of fluvial terrace
- Gravel, fluvial sand deposits
- Scree
- Conglomerate
- Rock

- Houses / farm-buildings
- Stable / threshing place
- Building site
- Man made caves
- Mill
- Shrine (chorten)
- Mane-wall
- Wall protecting against erosion
- Path

Fieldsurvey and names: P. Pohle, Temba Woeser (Oct. 1991)
Transcription: R. Bielmeier
Cartography and reproduction: M. Remmers and G. Thiele
Base maps: Cadastral Maps Kāgbeni 1 : 1250, Ward 8A,8B,8C, 8E, 7A; Topographic Map Kāgbeni 1 : 2500, R. Kostka, Graz 1992
Printed by: R. Stolper, Dept. of Geography, Giessen 1992